



THE UNIVERSITY *of* EDINBURGH

## Edinburgh Research Explorer

### A Review of Young People and Smoking in England

**Citation for published version:**

Amos, A, Angus, K, Bostock, Y, Fidler, J & Hastings, G 2009, *A Review of Young People and Smoking in England*. Public Health Research Consortium.

**Link:**

[Link to publication record in Edinburgh Research Explorer](#)

**Document Version:**

Publisher's PDF, also known as Version of record

**General rights**

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

**Take down policy**

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.





Public Health  
Research Consortium

## **A Review of Young People and Smoking in England**

### **FINAL REPORT**

Revised 20 May 2009

#### **Grantholders**

Amanda Amos, University of Edinburgh

Gerard Hastings, University of Stirling & the Open University

#### **Project Team**

Amanda Amos, University of Edinburgh

Kathryn Angus, University of Stirling

Yvonne Bostock, Bostock Consulting, Edinburgh

Jenny Fidler, UCL

Gerard Hastings, University of Stirling & the Open University

The work was undertaken by the grantholders as part of the Public Health Research Consortium. The Public Health Research Consortium is funded by the Department of Health (DH) Policy Research Programme. The views expressed in the publication are those of the authors and not necessarily those of the DH. Information about the wider programme of the PHRC is available from [www.york.ac.uk/phrc](http://www.york.ac.uk/phrc).

## **ACKNOWLEDGEMENTS**

The project team would like to thank the key informants who suggested papers and reports that should be included in the literature review and who provided several ‘in press’ publications; the workshop participants for their involvement in the workshop and comments on an early draft of the report; Professor Ann McNeill and Dr Linda Bauld for their input throughout the project; Aileen Paton and Rosa Bissett for their administrative support.

# **CONTENTS**

	<b><u>Page No</u></b>
<b>PREFACE</b>	<b>1</b>
<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>1. INTRODUCTION</b>	<b>9</b>
1.1 Background	9
1.2 Aims	10
1.3 Research questions	10
1.4 Resources and deadlines	10
<b>2. METHODS</b>	<b>12</b>
2.1 Sources of Data on Smoking Among Young People	12
2.2 Literature Review Methodology	14
2.3 Workshop	15
2.4 Strengths and Limitations of the Review	15
<b>3. CURRENT PATTERNS AND TRENDS IN SMOKING AMONG YOUNG PEOPLE IN ENGLAND</b>	<b>17</b>
3.1 Smoking Prevalence Among Young People	17
3.2 Smoking by Gender	20
3.3 Smoking by Age	21
3.4 Smoking by Socioeconomic Status	22
3.5 Smoking by Ethnicity	24
3.6 Smoking Habits	25
3.7 Purchasing Behaviour	26
3.8 Dependence, Intentions to Quit, and Quit Attempts	28
3.9 Knowledge and Attitudes About Smoking	29
3.10 Smoking Patterns by Parents, Siblings and Friends	31
3.11 Conclusions	32
<b>4. WHAT IS KNOWN ABOUT WHY YOUNG PEOPLE START AND CONTINUE TO SMOKE</b>	<b>34</b>
4.1 The Process of Becoming a Smoker	34
4.2 Individual Factors	34
4.2.1 Age and Development	34
4.2.2 Socioeconomic Status and Disadvantage	36
4.2.3 Gender	37
4.2.4 Ethnicity	38
4.2.5 Educational Attainment, Aspirations and Engagement	40
4.2.6 Knowledge, Beliefs and Attitudes	41
4.2.7 Self-image and Self-identity	43
4.2.8 Self-Esteem	44
4.2.9 Mental and Emotional Health	45
4.2.10 Dependence and Addiction	45
4.2.11 Other Substance Use: Alcohol, Cannabis and Other Drugs	47
4.2.12 Other Health-related Behaviours: Diet, Dieting and Physical Activity	49
4.2.13 Personal Resources (Money)	51
4.2.14 Summary	52

4.3	Social and Community Factors	52
4.3.1	Parents	52
4.3.2	Parenting Style	54
4.3.3	Other Family Members	54
4.3.4	Friends and Peers	55
4.3.5	Schools	57
4.3.6	Neighbourhood	59
4.3.7	Summary	60
4.4	Societal Factors	60
4.4.1	Access	60
4.4.2	Price, Tax and Illicit Tobacco	62
4.4.3	Media	63
4.4.4	Tobacco Promotion and Marketing- Point of Sale	66
4.4.5	Tobacco Promotion and Marketing- Packaging	67
4.4.6	Tobacco Promotion and Marketing- Pack Size	68
4.4.7	Social attitudes and norms	69
4.4.8	Summary	70
4.5	Conclusions	70
<b>5.</b>	<b>CURRENT TOBACCO CONTROL POLICY CONTEXT AND FUTURE POLICY OPTIONS AND THEIR LIKELY EFFECTIVENESS</b>	<b>73</b>
5.1	Youth Smoking Prevention	73
5.1.1	Family Setting	73
5.1.2	School Setting	74
5.1.3	Community Setting	78
5.1.4	General Practice / Primary Care Setting	79
5.2	Societal Level Policy and Interventions	79
5.2.1	Social Norms, Attitudes and Behaviours- Adults	79
5.2.2	Access	80
5.2.3	Price and Taxes	82
5.2.4	Tobacco Marketing	83
5.2.5	Mass Media	84
5.2.6	New Media	87
5.2.7	Incentives	88
5.3	Multi-component Policy, Community and Societal Level Prevention	89
5.4	Youth Smoking Cessation	90
5.4.1	Youth Smoking Cessation Review Evidence	90
5.4.2	Youth Smoking Cessation Studies	92
5.4.3	Pharmacotherapy	94
5.4.4	Increasing Intentions to Quit and Quitting	95
5.5	Conclusions	96
<b>6.</b>	<b>THE WORKSHOP</b>	<b>99</b>
6.1	Workshop Methodology	99
6.1.1	Background	99
6.1.2	Purpose	99
6.1.3	Format	99
6.1.4	Participants	100
6.2	Inputs to the Workshop	100
6.2.1	Scene Setting	100

	<b><u>Page No</u></b>
6.2.2 Summary	102
6.3 Workshop Day – Inputs	102
6.3.1 Draft Review	102
6.3.2 ‘What Works’ – Three International Case Studies of Success in Reducing Smoking in Young People	103
6.4 Discussion Outcomes and Conclusions	104
6.4.1 A Values Driven Sustained Approach	104
6.4.2 Mass Media	105
6.4.3 Inequalities	106
6.4.4 Settings	107
6.4.5 Supply, Pricing and Availability of Tobacco Products	108
6.4.6 Cessation	109
6.4.7 ‘Joined-up’ Policy	109
6.4.8 Research and Evaluation	110
<b>REFERENCES</b>	<b>111</b>
<b>APPENDICES</b>	<b>122</b>

## **PREFACE**

The Department of Health's consultation document on the future tobacco control strategy for England recognised that while the Government has taken action to reduce smoking uptake and help young people who want to quit, more action is needed (Department of Health 2008). Specifically, it asked what more could the Government and other public services do to reduce smoking prevalence in young people. To help inform this consultation process and subsequent policy development the Department of Health commissioned a rapid and short review on young people and smoking in England. This report presents the findings of this review. It draws on available literature, supplemented with expert (national and international) opinion gathered at a day and a half workshop, to assess what is known about which young people in England smoke and why, and the evidence on the effectiveness of potential policy options on youth prevention and cessation.

The report, which provides the most comprehensive review of smoking and young people undertaken in recent years, shows that over the last 25 years there has been a marked consistent decline in tobacco use among 16-24 year olds. The reduction among 11-15 year olds has been more gradual, plateauing in the early 2000s but accelerating in 2007. Most young people start experimenting with smoking in their early to mid teens, but smoking prevalence and consumption increases until the mid-twenties. A range of inter-related factors operating at the individual, family, social, community and societal levels influence whether a young person starts and continues to smoke. The roots of the socio-economic patterning of smoking, which is so clear in adults, start to emerge in the early teens with the evidence becoming clearer in the late teens and early twenties.

The review found clear evidence that certain types of policies, programmes and interventions can make significant contributions to smoking prevention. Comprehensive multi-faceted approaches are the most effective. In contrast there are interventions which have little or no proven effectiveness, and others which are promising but as yet lack a firm evidence base. The evidence on the effectiveness of youth smoking cessation interventions is less clear and it is concluded that the case for investing in these is unproven.

## **EXECUTIVE SUMMARY**

### **Purpose and Methods**

The onset of smoking is a key concern in the fight against tobacco. We know that uptake starts in the teens and continues into the early twenties, but thereafter virtually no one begins smoking. It is also clear that smoking in the 11-24 years age bracket is a tentative phenomenon, characterised by experimentation, sporadic consumption and ambivalence. Whilst most young people will give smoking a try, only a minority (less than a third) go on to become regular smokers. Beyond the age of 24 years these regular smokers typically consolidate their habit, intensify their consumption and find it increasingly difficult to quit - despite a widespread desire to do so.

In recent years tobacco control in England has adopted a 'trickle down approach' to youth smoking, concentrating efforts mostly on adult cessation in the expectation that the resulting reductions in adult prevalence and shift in tobacco related social norms will have a knock-on effect with the young.

There is some evidence to suggest this has worked – youth smoking has decreased. However there has also been an increasing debate about the benefits of adding in to the tobacco control mix more efforts specifically targeting young people. Recent reports from both the National Institute for Health and Clinical Excellence (NICE) and the National Cancer Institute (NCI), for instance, have pushed in this direction. Furthermore, given the age profile of uptake, intervening with the young presents the only opportunity for direct smoking prevention.

The Department of Health has therefore commissioned this rapid (6 months), short review to assess the potential for strengthening the youth-oriented dimension of their tobacco control strategy. They want evidence informed advice on its viability and the form it should take. The review will complement their recent consultation on the future tobacco control strategy for England (Department of Health 2008) and help inform the development of policies.

Given the project resources and set time limits, two methods were used. First an analysis of the literature was conducted. This interrogated major databases with a particular focus on existing reviews, and also used contacts with experts from around the world to access grey literature to answer three questions set by policy teams within the Department of Health:



1. What are the current patterns and trends in smoking in young people (11-24 years) in England by key socio-demographic variables (sex, age, socio-economic status, ethnicity)?
2. What is known about why young people start and continue to smoke?
3. What is the current tobacco control policy context and future policy options on smoking prevention and cessation for young people in England and their likely effectiveness?

Second an expert workshop was organised involving 23 tobacco control experts from the UK and three international experts (two from the USA and one from Canada). This provided feedback on a draft of the literature review, but also focussed on next steps. In particular it encouraged participants to take a leaf out of the tobacco industry's book and "*build on insight, ingenuity and creativity as well as hard data*". The result was an extremely stimulating day and a half that generated valuable suggestions on how youth smoking should be tackled.

## Key Findings

In the last 25 years England has seen a marked decline in tobacco use among young people. This has been a consistent trend among 16-24 year olds, whilst reductions among 11-15 year olds have been more gradual, and stalled in the early 2000s but then accelerated in 2007.

This encouraging progress has been achieved using a strategy which combines regulation and intervention. Importantly, policy measures have constrained tobacco marketing, maintained the price of cigarettes and provided protection against second hand smoke. The review confirms that these have brought direct benefits to all age groups, though their relative impact varies: the tobacco advertising ban for example probably has most influence on children whose smoking is more fluid and tentative; whereas smokefree public places has probably had a more immediate impact on older adolescents and adults - if only because the key locus for the policy is licensed premises. Similarly the workshop concluded that English tobacco control policy over the last decade has been progressive and successful. This partly reflects the effectiveness of its individual strands, but also the fact that it is multifaceted and strategic. It is now abundantly clear from the evidence base that the best tobacco control is comprehensive tobacco control.

However, in one important sense tobacco control in England has not been comprehensive: in recent times at least, smoking amongst young people has not been directly addressed as thoroughly as it could have been. Instead, interventions have mainly concentrated on adults and the need to

encourage and support their quitting. In particular there has been consistent investment in cessation services. Children and young people have been seen as the indirect beneficiaries of the smokefree norms and homes that result from successful adult cessation. The review and the workshop confirmed that there are undoubtedly strengths in this trickle down model, and much of the progress made with English youngsters can be attributed to it.

While recognising the limitations of this rapid review, in terms of both the amount of literature that could be reviewed and the depth of the critical analysis that could be undertaken within the time limits, both exercises suggested that there is strong evidence to support more direct approaches to the young to supplement the current strategy. Furthermore, prevalence data show that there is clearly still much work to be done. Notwithstanding the successes noted above, around 15% of 15 year olds continue to become regular smokers, and prevalence rises to 31% among 20-24 year olds - higher than for any other age group.

More specifically the review and the workshop generated the following conclusions:

- i. The great majority of smokers start in adolescence – and almost all before the age of 24 years. The review found that many young people move in and out of smoking during adolescence, find it hard to engage with standard cessation services and generally exhibit greater ambivalence about their tobacco use than do adults.
- ii. Arguably the notion of prevention also makes sense well into early adulthood, where the line between smoker and non-smoker remains blurred. Is the term-time student smoker who ultimately gives up tobacco a successful quitter, or an incomplete starter?
- iii. This blurring of smoking status suggests that binary definitions are unhelpful, and it may make more sense to unite campaigns, programmes and initiatives in the fight against youth tobacco use rather than always opting for either prevention or cessation.
- iv. There is good evidence that intervening with young people works: as the NCI concludes *“evidence from controlled field experiments suggests that anti-tobacco mass media campaigns conducted in conjunction with school or community based programming can be effective in curbing smoking initiation in youth...”* (Davis et al 2008, p537).
- v. Inequalities add urgency to the picture: it is apparent that the long recognised social divide in adult smoking is a product of both more disadvantaged young people taking up smoking and a reduced ability to quit once they have started. The review shows how adolescent smoking trajectories are inter-twinned with social, educational, occupational and economic trajectories.

- vi. The review found that the onset of smoking is a function of individual factors (e.g. self image), social and community factors (e.g. family circumstances) and societal factors (e.g. tobacco marketing). Interventions therefore need to address all these domains. This highlights the need for, and the evidence from the review and workshop supports, the complementary local, regional and national initiatives.
- vii. Norms matter. Young smokers are beset by false norms: they are much more likely to live in families that smoke, have friends who smoke and have exaggerated perceptions of how common and acceptable smoking is. There is evidence from the review that these norms encourage and reinforce their tobacco use, and that correcting them will do the reverse.
- viii. These multilayered phenomena can only be addressed by a comprehensive strategy. While the review found that the evidence base is both incomplete and variable (tax and media campaigns work, local youth access measures do not, youth cessation services are unproven, and schools programmes lie somewhere in the middle), in another sense the literature is remarkably consistent: it is abundantly clear that there is no one solution; rather a mix of approaches is needed. The words ‘multi-faceted’, ‘multi-component’ and ‘comprehensive’ recur in the evidence base. Thus media campaigns work better if they are combined with community interventions and better still if they are part of a comprehensive tobacco control strategy. Similarly it is often very difficult to tease out the contribution of individual elements in multi-component programmes, but the cumulative impact is clear.
- ix. The review found that tobacco marketing continues to be a major problem. Notwithstanding the proven success of the Tobacco Advertising and Promotion Act 2002 (TAPA), tobacco brands are still influencing youth smoking. The key remaining transmitters of this branding are point of sale (PoS) presence and the pack, and both need policy attention:
  - The power of PoS will be reduced when product displays are removed. However the workshop participants concluded as tobacco will still be available for sale in every high street, corner shop and supermarket a positive message about the normalcy of smoking will continue to be communicated. Several workshop participants concluded that serious consideration should therefore be given to reducing the distribution network for tobacco products.
  - The review found that tobacco industry is exploiting the pack as a medium for advertising the product and reinforcing the brand. It is therefore concluded that generic packaging is an essential next step.
- xi. Ultimately the marketing of tobacco will continue so long as tobacco companies are allowed to operate in the UK; as a recent EU tobacco control conference concluded, “*the tobacco*

*industry is the cause of the tobacco pandemic and therefore has to be put out of business”* (HELP 2008).

- xii. By the same token, tobacco control can learn some marketing lessons from the tobacco industry. Both the review and workshop concluded that consumer orientation, sophisticated imagery and powerful branding have more resonance with young people than expert driven, didactic health messages.
- xiii. The review and workshop identified important continuing research needs: more should be learned about socio-economic status, gender and the process of transition to adulthood. In addition research should be used flexibly and imaginatively to guide innovative approaches to young people. The need is not just for RCTs and other more established approaches to research, but also for navigational research that identifies and maps the trajectory of promising initiatives.
- xiv. The expert workshop discussed how new media present a great opportunity in this regard. Whilst the review found little hard evidence to support their use – developments are too recent– the workshop participants strongly endorsed the benefits of electronic communications. New media have extensive reach even into disadvantaged groups, enable innovative communications and, most importantly, have the capacity to be interactive and peer driven. Indeed the workshop heard how conventional campaigns are now readily co-opted by young people using devices such as social networking and blogs. Researchers have recognised for decades that the audience is actively involved in any successful communication; technological advances make it much easier to put this truth into practice.
- xv. Finally, it is vital to tell a coherent story about the success of tobacco control: young people need to know that tobacco use is disappearing in the UK; that it is no more than an historical anomaly which is set to die out altogether in their lifetimes. This will help combat pro-tobacco norms and provide a positive frame for both policy initiatives and interventions.

## **Conclusions and Recommendations**

Both the literature review and the expert workshop strongly endorsed the value of adding an explicit youth-oriented dimension to a tobacco control strategy for England. The precise form this takes must be the subject of careful developmental research with young people; however it is already clear that:

- Tackling youth smoking is most effective if it involves a comprehensive, multi-component, well-funded and sustained approach that addresses the individual, social, community and societal determinants of smoking uptake.
- Media campaigns have a key role to play, particularly at a national level. The workshop participants, drawing on both the literature findings and their own experience, agreed that these should be youth driven, edgy and non-didactic, with an eye on the potential for developing an engaging brand. New media were recognised as presenting enormous opportunities and should be utilised. Conversely it was argued that if they are ignored there is a risk that they will be used by disaffected young people to undermine more conventional approaches.
- Given the need to push the boundaries, the expert workshop concluded that it may make sense for the Department of Health to work with a partner organisation which has more freedom of movement and credibility with young people. The workshop also recognised the need for national and regional efforts to be well coordinated and operate in concert to achieve maximum effect, whilst recognising the benefits of diverse sourcing. In particular the recent development of strong regional tobacco control functions should be actively exploited.
- The review and workshop showed the importance of continued government action to increase the real price of tobacco and cigarettes through taxation, and to eliminate all forms of tobacco marketing. With respect to marketing the two immediate priorities, following the removal of point of sale display, are to restrict distribution and introduce generic packaging. Longer term, a serious debate should be started about the value of having a free market for tobacco in the UK. Unless these countervailing pressures are adequately and openly addressed other actions will be undermined.
- Schools are a promising locus for reaching and supporting young people, provided initiatives genuinely engage with pupils (as with the ASSIST initiative), are sustained and are located within a broad, health promoting school perspective.
- Efforts to reach young people have to be nested within and supported by a comprehensive tobacco control strategy which continues to address and drive down adult prevalence.
- New initiatives need to be developed and evaluated which specifically address smoking and disadvantaged young people.

It is apparent, then, that a long term effort is needed. The tobacco industry has succeeded until now because it has focused its efforts and plugged away doggedly in the half century since Richard Doll

first uncovered the toxicity of their products. The leading brands have changed and developed over this time, but the basic determination to keep smoking as an acceptable, attractive and, above all, normal part of English youth culture has remained undimmed. Their efforts have exacted a shocking toll on young people.

This review has confirmed that a specific focus on young people should be central to the continuing fight back. The tobacco industry has clung on for 50 years; experts argue that it will take another 25 to finally prise their fingers off our children. This review shows that a multifaceted, youth (consumer) oriented strategy is needed to directly engage the younger generation in the battle against tobacco. As the smoking pandemic enters its endgame in the UK, they are the vanguard; the task is to equip and empower them. It will be achieved by clarity of vision, partnership working, trust, long term commitment and determination. Fortunately past experience demonstrates that UK tobacco control has these qualities in abundance.

# **1. INTRODUCTION**

## **1.1 Background**

Considerable progress has been made in recent years in reducing cigarette smoking among adults in England. Between 2001 and 2007 smoking prevalence among adult men declined from 28% to 22% and among adult women from 26% to 20% (Robinson & Lader 2008). However, there has been relatively less success in reducing the uptake of smoking in young adolescents. Regular smoking in 11-15 year olds declined by only one percentage point between 2001 and 2006, from 11% to 10% in girls and 8% to 7% in boys, though there appears to have been a significant decline between 2006 and 2007 to 8% in girls and 5% in boys (Fuller 2008).

In May 2008 the Department of Health initiated a consultation on the future tobacco control strategy for England (Department of Health 2008). One of the key issues identified by the consultation was how to reduce smoking in children and young people. The consultation document highlighted that while most adult smokers report that they started regular smoking in their teens, smoking prevalence continues to increase into the mid-20s, with the 20-24 year old group having the highest smoking prevalence of any age group at 31% (Robinson & Lader 2008). Thus in addressing youth uptake it is important to consider the determinants of smoking across the 11-24 years age range which encompasses both early experimentation and transition into regular adult smoking.

The consultation document also focused on the importance of smoking as the main cause of social inequalities in healthy life expectancy in England and the considerable public health challenge of reducing smoking in disadvantaged groups. While smoking has declined among adults, smoking remains highly associated with socio-economic circumstances and there has been little or no reduction in the gap between smoking rates in the most and least socially disadvantaged groups (Robinson & Lader 2008). It is therefore important to understand what is known about whether and in what ways smoking uptake is socially patterned in order to assess how youth smoking prevention and cessation policies and programmes might contribute to addressing this key inequalities and health issue.

The consultation document recognised that while the Government in recent years has taken significant action aimed at reducing smoking uptake and helping young people who want to quit, more action is needed. Specifically it asked what more could the Government, and other public

services, do to reduce smoking prevalence rates in young people. Addressing this question requires and understanding of which young people in England smoke and why, and the evidence of the effectiveness of different potential policy options on youth prevention and cessation both generally and for different groups.

## **1.2 Aims**

This project is designed to help inform the Department of Health's tobacco control strategy consultation process and subsequent policy development by addressing specific questions set by the Department's tobacco policy team in relation to young people and smoking in England. The aim of this project is to produce a report which outlines and reviews the evidence base on young people (11-24 years) and smoking, particularly in relation to smoking prevention.

## **1.3 Research Questions**

The report addresses three key questions:

### **1. What are the current patterns and trends in smoking in young people (11-24 years) in England by key socio-demographic variables (sex, age, socio-economic status, ethnicity)?**

Specifically, what do national surveys tell us about:

- smoking uptake (which young people are most likely to start smoking and when)
- smoking patterns of parents, siblings and friends
- young people's sources of cigarettes and expenditure (legal and illegal), including perceptions of affordability
- what young people smoke (pack size and brand)
- young people's smoking knowledge, attitudes and intentions (including cessation)
- young people's quit attempts and use of NHS stop smoking services
- inequalities and smoking.



## **2. What is known about why young people start and continue to smoke?**

Specifically, what are the important factors and influences operating at different levels and socio-economic groups:

- individual (e.g. knowledge, beliefs, self-image)
- social (e.g. parents, other family members, friends)
- community (e.g. school, neighbourhood)
- societal (e.g. access, media, promotion)

## **3. What is the current tobacco control policy context and future policy options on smoking prevention and cessation for young people in England and their likely effectiveness?**

Specifically, what does the research evidence tell us about the effectiveness of different policies and interventions.

### **1.4 Resources and deadlines**

The project started in August 2008 and was funded for 6 months so that the final report would be available early in 2009 to help inform the development of the Department of Health's tobacco strategy. Resources were provided to fund a full-time research assistant for 5 months (Kathryn Angus), expert input on smoking patterns and trends (Jenny Fidler), a workshop facilitator (Yvonne Bostock), workshop expenses and clerical support. The project was co-supervised by Amanda Amos and Gerard Hastings.

## **2. METHODS**

Given the available resources and set deadline, it was not feasible to undertake a detailed comprehensive or systematic review. In order to address the research questions detailed in Section 1, this report draws on the relevant information primarily from national surveys and recent national and international reviews on young people (11-24 years) and smoking, including general reviews and those on specific aspects on youth smoking prevention and cessation. An expert seminar/workshop in January 2009 brought together a group of experts in young people and smoking to consider a draft of the review, identify any significant gaps in the research review and consider the evidence on the likely effectiveness of future policy options. The methods used for each section are set out below

### **2.1 Sources of Data on Smoking among Young People (Section 3)**

There are a several different sources of national data on smoking prevalence among young people in England. The official national estimates of smoking prevalence among 11-16 year olds are provided by the Smoking Drinking and Drug Use Surveys, currently carried out by the National Centre for Social Research and the National Foundation for Educational Research. Annual prevalence data are collected from a representative sample of 11 to 15 year old students in a school based setting, the most recent summarising smoking prevalence in 2007 (Fuller 2008). In alternating years there is a focus on either smoking or drug use. The last year with a focus on smoking was 2006 (Fuller 2007). The Health Survey for England provides data on smoking prevalence among children aged 8 to 15 in years when this sample is 'boosted', as well as annual data on those aged 16 and above (Craig & Mindell 2008a, Craig & Mindell 2008b). The General Household Survey also provides smoking prevalence data for adults aged 16 and over (Robinson & Lader 2008), and recent data on prevalence in this age group can also be drawn from the Smoking Toolkit Study which provides monthly data from November 2006 to July 2008 (West 2008). Each of these sources includes additional data on a range of sociodemographic and smoking behaviour variables. Other surveys also provide information on smoking behaviour among young people, including the National Statistics report on Smoking-related Behaviour and Attitudes, which documents questions on smoking asked as part of the ONS omnibus survey (Lader 2008), the Health Behaviour in School-aged Children Study (HBSC) (Morgan et al 2006, Currie et al 2008) and statistics from the NHS Stop Smoking Services (NHS Information Centre 2008). These

resources will be used to provide a summary of the patterns and trends in smoking among young people.

Each of these surveys uses slightly different methodologies and none cover the full age range of 11 to 24 examined in this report. The Smoking Drinking and Drug Use, and Health Survey for England data on 11-15 year olds use the same smoking question and identify both ever smoking and regular smoking, defined as one or more cigarettes a week. However, the Smoking Drinking and Drug use reports consistently produce higher estimates of prevalence than the Health Survey for England. This is likely to be a consequence of the method of data collection; Smoking, Drinking and Drug Use data are collected in a school-based setting, whereas Health Survey for England questionnaires are completed in the home where younger participants may be more reluctant to admit to smoking. Objective measurement of smoking behaviour using cotinine, a metabolite of nicotine, confirms that young people in the Health Survey for England under-report their smoking behaviour (Craig & Mindell 2008b). Conversely it has been suggested that some exaggeration of smoking behaviour may occur in school based studies as questionnaires are completed in the presence of peers. However, cotinine samples were collected as part of the Smoking, Drinking and Drug Use series between 1990 and 1998 and analyses showed that pupils were largely accurate in their reports of smoking behaviour. In addition, the responses of those not tested for cotinine were similar to the biologically verified figures, ruling out a bogus pipeline effect of cotinine testing (Goddard & Higgins 1999). Smoking Drinking and Drug use prevalence data therefore probably present a more accurate picture of smoking behaviour among 11-15 year olds, and will be presented here as the most accurate picture of trends in adolescent smoking, although Health Survey for England data will be used to supplement these figures.

The Health Survey for England also includes annual smoking data for 16 to 24 year olds, as does the General Household Survey. The General Household Survey is the official source of adult smoking prevalence for England, although the Health Survey for England adds some important information, such as cotinine values. Both surveys use the same smoking status question format (although different from that used for 11 to 15 year olds), have a similar number of participants, and provide self-completion questionnaires for younger respondents to encourage more accurate self-report (Craig & Mindell 2008a, Robinson & Lader 2008). However, General Household Survey data are available from 1974, while Health Survey for England coverage began in 1993. Finally, the Smoking Toolkit Study also assesses smoking status and behaviour from age 16, although it is not directly comparable with General Household Survey and Health Survey for England data as it uses

a different smoking status question (West 2006). This data can be used to assess recent trends on a monthly basis.

## **2.2 Literature Review Methodology (Sections 4 and 5)**

In order to compile the published evidence on why young people (aged 11 to 24 years) start and continue to smoke and the evidence on effectiveness of interventions, searches for literature were conducted in a number of ways. First, searches were run during August-September 2008 in the following literature databases for English language reviews published in the last 10 years covering smoking and young people: PubMed, the Web of Science citation indices, the Cochrane Library and the Centre for Reviews and Dissemination. Web searches were also run using Google and on organisations' websites (such as NICE, ESRC, King's Fund). In addition, a focused search was run in PubMed for any research on young people and smoking specifically from the UK published in the last 10 years. Around fifty experts in youth smoking/tobacco control were identified and contacted to recommend recent reports, reviews or important/cutting edge studies on young people and smoking. These experts were from Australia, Canada, New Zealand, UK and USA and a very good response was received with useful leads to follow up, copies of new publications and drafts of relevant work. Following the initial searches and contact with experts, additional relevant literature was included in the review as its authors became aware of it or as it became available to them (up to February 2009).

A total of 74 relevant reviews from the last decade were identified using the search methods above. Where the topics and studies covered by a review were similar, the most recent was used for this report; thus 55 reviews are included here, 22 of which are systematic reviews and the rest meta-analyses and narrative reviews. A further 160 papers published in the last decade and reporting on primary studies were identified. 134 of these are used in this report; 97 covering studies in the UK and 37 on studies conducted elsewhere.

The evidence is organised into the main factors influencing young people starting and continuing to smoke (Section 4), followed by what the research evidence tells us about the effectiveness of different policies and interventions on smoking prevention and smoking cessation for young people (Section 5), in order to help assess likely effectiveness with young people in England. Where the review evidence is several years old, primary studies published since the review's searches are summarised for any up-to-date evidence.

## **2.3 Workshop (Section 6)**

The expert workshop took place on the 7<sup>th</sup> and 8<sup>th</sup> January 2009 in London. Invitations were sent out to 25 prospective participants including UK academics, organisations working on young people and smoking, international experts, media/communication experts, regional tobacco control organisations, the Department of Health and NICE. The workshop was facilitated by Yvonne Bostock and, alongside the rest of the project team, 20 participants attended including three international experts (one from Canada and two from the USA) who presented on their countries' success in reducing smoking in young people (Appendices 1-4). Participants were sent a draft of the project report and had a chance to make comments and identify gaps in the evidence used, and then the workshop focuses on identifying the key issues in relation to future policy options on relation to young people and smoking. The workshop report is in Section 6.

## **2.4 Strengths and Limitations of the Review**

This review has several strengths including:

- the systematic approach taken in the literature searches and compilation of material
- the breadth of the topics and issues considered
- the inclusion of grey literature and papers 'in press' to broaden the scope and relevance of the material that was considered
- the involvement of a range of key academics and other experts in reflecting on the initial review findings and drawing on their own experience, particularly in areas where the research is as yet limited.

The review also has several limitations which need to be borne in mind when considering the evidence and subsequent conclusions and recommendations. These include:

- the limited ability (due to time) to undertake a more formal critical appraisal, analysis and synthesis of the literature and evidence. Thus many of the reviews and studies had to be taken at 'face value' A more in-depth critique might have highlighted strengths and weaknesses in the quality of the material which could have had implications for the conclusions and recommendations.

- the reliance on experts' recommendations of recent key non-UK studies which is selective and therefore may have missed out some important new papers and studies. Similarly the selection of workshop participants is likely to have had an influence on the workshop discussions and conclusions.
- the exclusion of material that was not specifically focused on tobacco and smoking in young people. For example, adult tobacco control interventions which might also impact on young people, health promotion youth interventions addressing other or generic health issues, the broader adolescent health literature.

### 3. CURRENT PATTERNS AND TRENDS IN SMOKING AMONG YOUNG PEOPLE IN ENGLAND

#### 3.1 Smoking Prevalence Among Young People

Smoking Drinking and Drug Use reports chart a long term decline in the prevalence of ever smoking among 11 to 15 year olds, from 53% in 1982, to 45% in 2000, to the most recent figure of 33% in 2007 (Fuller 2008). This recent figure is itself somewhat lower than observed in the previous few years when prevalence stayed relatively stable at around 40%. Regular smoking among 11-15 year olds (which in this younger group is defined as smoking one or more cigarettes a week) is displayed by sex in Figure 1 and shows a similar pattern of overall decline, from 11% in 1982 to 10% in 2000, then staying relatively stable until a further decline to 6% in 2007 (Fuller 2008). If this decrease can be maintained the Government's target of 9% or less by 2010 will be easily met (Department of Health 1998). Occasional smoking in this age group is defined as smoking sometimes, but not every week, with 5% of 11-15 year olds reporting this level of smoking in 2007. Figure 1 also shows how the Health Survey for England prevalence estimates for this age group are somewhat lower than those from the school based Smoking Drinking and Drug surveys (Craig & Mindell 2008b).

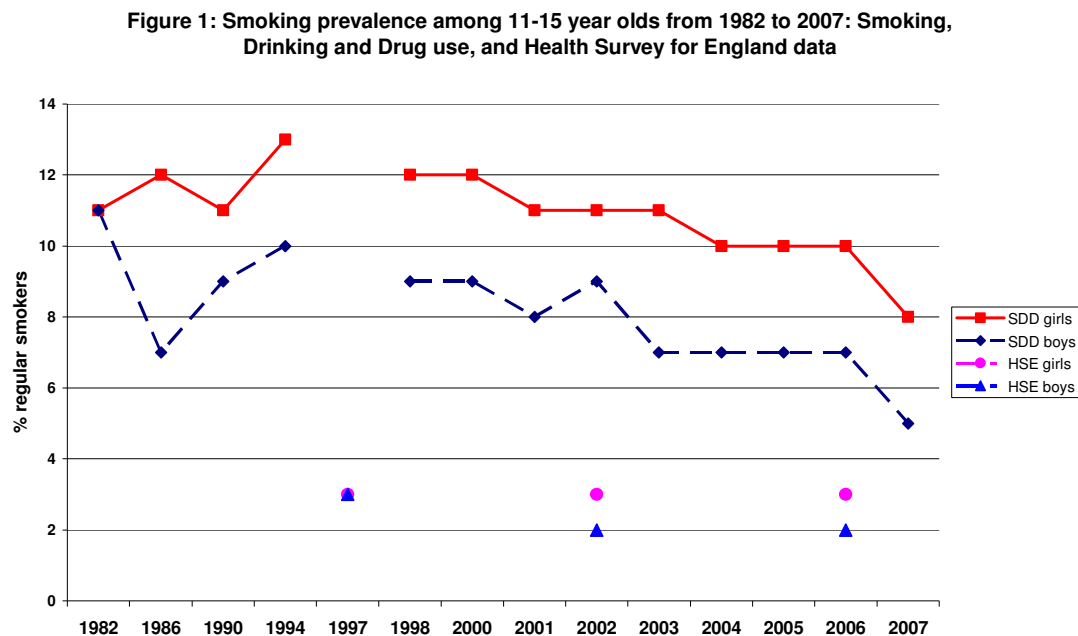
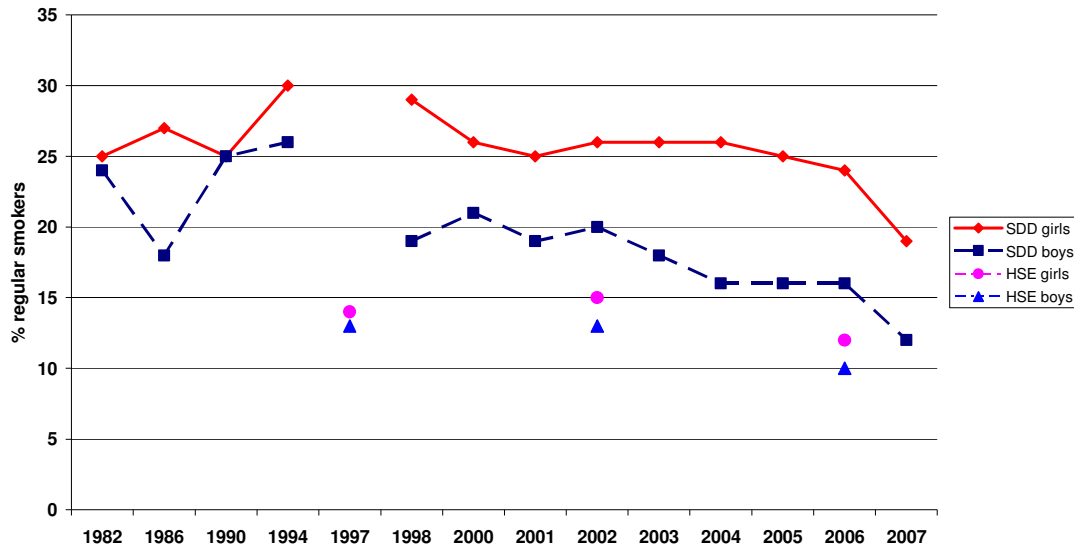


Figure 2 displays the prevalence of regular smoking among 15 year olds in England. Smoking among those in the upper age group surveyed in the Smoking Drinking and Drug use and Health Survey for England reports is obviously higher than when all ages are combined, with an overall

prevalence of 25% in 1982, 23% in 2000 and falling to 15% in 2007 after a period of stability at around 20% (Fuller 2008). Prevalence from Health Survey for England data is slightly lower than the Smoking Drinking and Drug uses figures, although the difference has narrowed (Craig & Mindell 2008b).

**Figure 2: Smoking prevalence among 15 year olds from 1982 to 2007: Smoking, Drinking and Drug use, and Health Survey for England data**



Prevalence data for older adolescents and young people are displayed in Figure 3 by sex. General Household Survey data are reported for both 16-19 year olds and 20-24 year olds, whereas Health Survey for England reports combine these two age groups (Craig & Mindell 2008a, Robinson & Lader 2008). It is clear that across time prevalence among the 16-19 age group is consistently lower than among the 20-24 age group, with the Health Survey for England data somewhere in between (data are similar when analysed to compare the same age groups). A clear long term trend of decline in smoking prevalence is seen over the period of data collection, with 2007 prevalence at 21% overall for 16-19 year olds and 31% for 20-24 year olds, falling from 40% and 48% in 1974 (Robinson & Lader 2008).

More recent prevalence data from a national sample are being collected on a monthly basis as part of the Smoking Toolkit Study. This English national household survey study samples approximately 1700 participants each month according to a two-stage sampling procedure and can be weighted to match the 2001 census (West 2006). Figure 4 shows the percentage of 16-24 year olds reporting cigarette smoking each month since data collection began in November 2006, split by sex (data are not split further by age due to sample size restrictions, but as with the General Household Survey a lower prevalence was observed among 16-19 year olds compared with 20-24



year olds - 26% vs. 36% overall respectively). With prevalence between 30% and 40% for 16-24 year olds these estimates are slightly higher than either the Health Survey for England or General Household Survey figures. This is the case across the toolkit sample as a whole and may be a function of a slightly different sampling strategy: General Household Surveys use a probability sample and non-smokers may be more likely to respond. However, it is more likely that the discrepancy is a result of different smoking status questions; the Smoking Toolkit Study asks specifically if participants smoke cigarettes (including hand-rolled) every day, or if participants smoke cigarettes (including hand-rolled), but not every day. The General Household Survey and Health Survey for England questions ask whether participants smoke cigarettes 'at all nowadays'. This may unintentionally exclude some smokers who are in the process of giving up or consider themselves very light smokers.

**Figure 3: Smoking prevalence among 16-24 year olds: General Household Survey and Health Survey for England data**

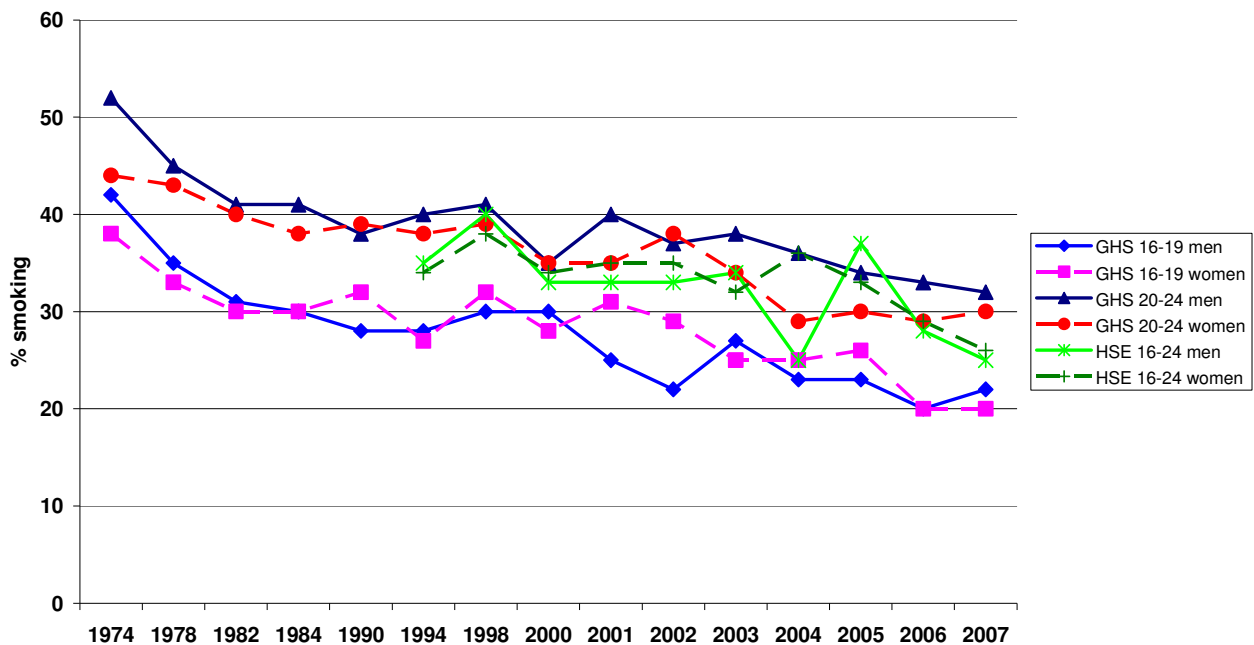
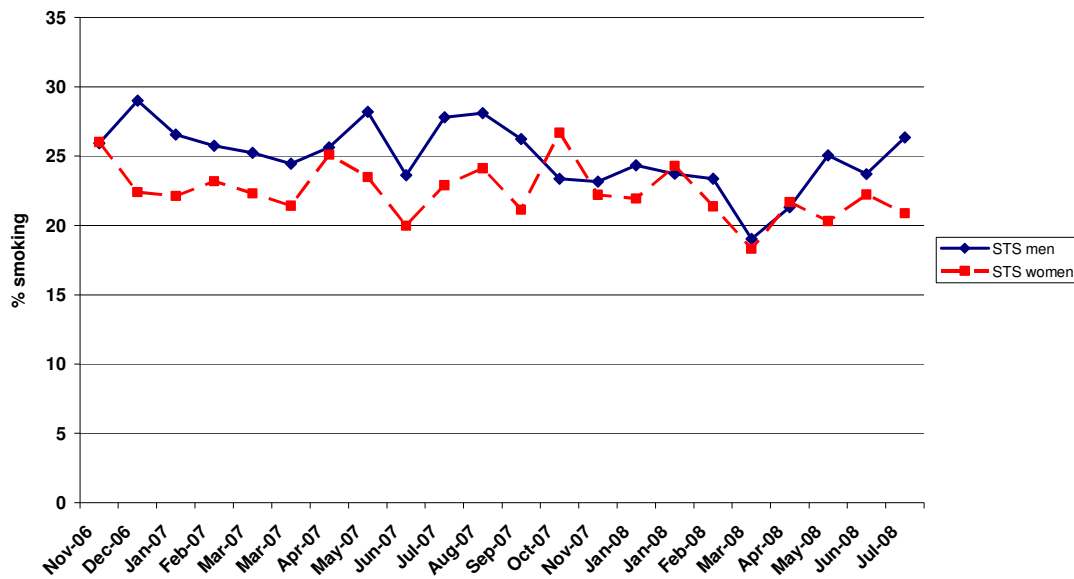


Figure 4: Smoking prevalence among 16-24 year olds: Smoking Toolkit data



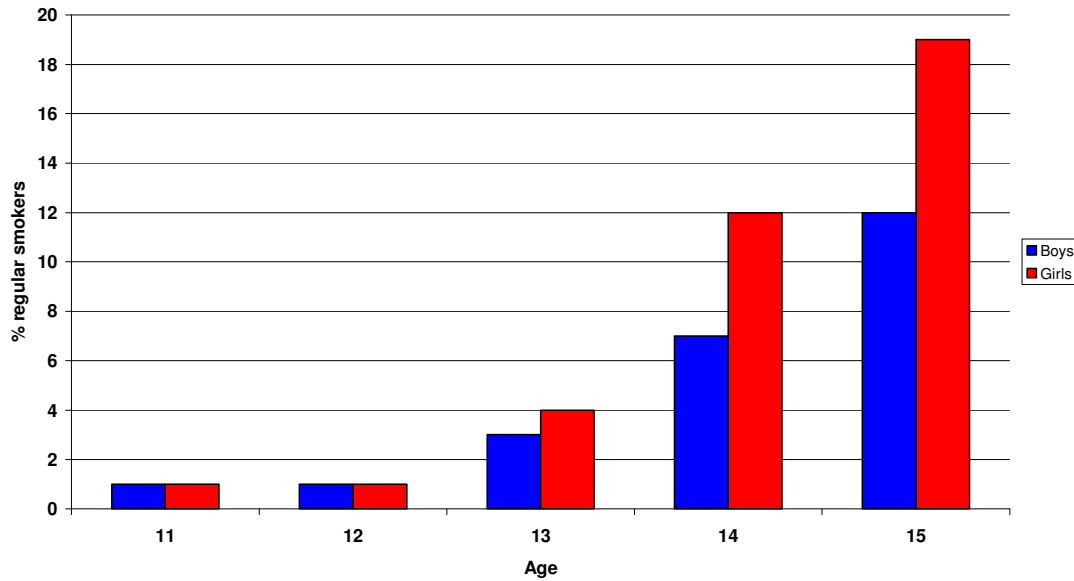
### 3.2 Smoking by Gender

Among adults men are more likely to be smokers than women (Craig & Mindell 2008a; Robinson & Lader 2008). However, in adolescence the pattern is more complex. In younger adolescence, overall, girls are more likely to smoke than boys, with 5% of 11-15 boys reporting regular smoking in 2007 compared with 8% of 11-15 year old girls, and at age 15 12% of boys reported regular smoking compared with 19% of girls (Fuller 2008). However, this gender difference reverses with age. The 2007 General Household Survey data report a prevalence of 22% in men and 20% in women aged 16-19, and 32% in men and 30% in women aged 20-24 (Robinson & Lader 2008). If these figures are tracked still further the gender difference increases by age 25-34 to 29% of men and 23% of women reporting smoking (Robinson & Lader 2008). These figures are echoed by Health Survey for England data with 27% and 28% of men and women respectively smoking at age 16-24 and 34% of men and 25% of women smoking at age 25-34 (Craig & Mindell 2008a). A higher quit rate among young women may explain this.

### 3.3 Smoking by Age

Smoking increases greatly by age from 11 to 16 as smoking initiation occurs. Only 9% of 11 year olds report ever smoking, and 1% are regular smokers at this age, according to 2007 Smoking Drinking and Drug use data (Fuller 2008). Prevalence of regular smoking remains below 4% at age 13, but there is a sharp increase at age 14, and by age 15 55% report ever smoking and 15% report regular smoking. As outlined above, there are gender differences in this progression, and although boys and girls show similar rates of early smoking uptake, girls quickly over take and by age 14 are more likely to smoke than boys according to both Smoking Drinking and Drug use and Health Survey for England reports, with 12% of boys and 19% of girls smoking at age 15 (Figure 5) (Fuller 2008). Smoking prevalence continues to increase past age 15 and General Household Survey data suggest that some individuals may still be beginning to report that they are smokers after the age of 19, with 21% smoking prevalence at 16-19 and 31% at 20-24 (Robinson & Lader 2008). It is important to note here that smoking behaviour at younger ages is not always constant but that an individual may fluctuate around different levels of smoking before finally identifying themselves as a consistent regular smoker (Goddard 1990). Examination of cotinine concentrations collected as part of the Health Survey for England has shown that this objective marker of nicotine intake among smokers continues to increase with age until around age 40, even when cigarettes consumed per day are taken into account (Fidler et al 2008a). Slight caution is warranted as these are cross-sectional surveys and so may reflect a fall in prevalence over time, however, past this point prevalence stays stable. Retrospective data on the age that adults reported first smoking regularly are given in the General Household Survey. The majority of participants aged 16 and over reported that they started smoking before the age of 18, with 41% of men and 36% of women first smoking regularly before the age of 16 and 26% of men and 28% of women first smoking between age 16 and age 17. There are clear socioeconomic differences in the age of uptake with those from routine and manual groups more likely to first smoke regularly before the age of 16 than those from managerial and professional groups (45% compared with 30%) (Robinson & Lader 2008).

Figure 5 - Prevalence of smoking by age and gender: Smoking Drinking and Drug use 2007 data

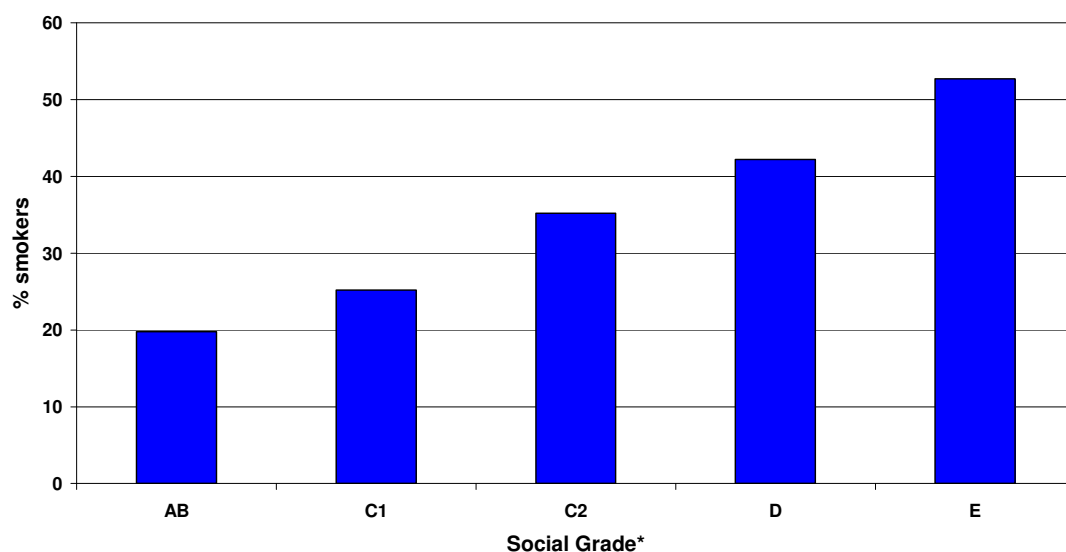


### 3.4 Smoking by Socioeconomic Status

There is a stark gradient in adult smoking by SES with those from lower grades most likely to smoke (Craig & Mindell 2008a, Robinson & Lader 2008). However, the situation is often less clear for adolescent smokers, and there is limited discussion of the relationship between smoking and SES in available reports. For example, the Smoking Drinking and Drug use surveys do not include established measures of SES such as parental occupation, housing tenure and access to a car but rather report the association between smoking among 11-15 year olds and two proxy measures of SES that children are more likely to report accurately: number of books at home and eligibility for free school meals. The association between these measures and smoking among 11-15 year olds is only reported in terms of their predictive ability in multivariate models. In 2007 students who reported a large number of books in the home were significantly less likely to report smoking behaviour (odds ratio = 0.61), however, eligibility for free school meals was not associated with smoking (Fuller 2008). The same pattern of results was seen in the 2006 survey (Fuller 2007). This apparent inconsistency may suggest that eligibility for school meals does not adequately capture variations in socioeconomic status. However, other studies have also found inconsistencies between measures of SES and smoking behaviour. For example, the English Health Behaviour in School-aged Children cohort of 2005/6 found that 15 year old girls (27%) were more likely than boys (19%) to report that they had first smoked at 13 years or younger and this was significantly higher in girls from low affluent families (Currie et al 2008). Regular smoking among 15 year olds was also significantly higher in girls and boys from low affluent families. The 2002 study found that

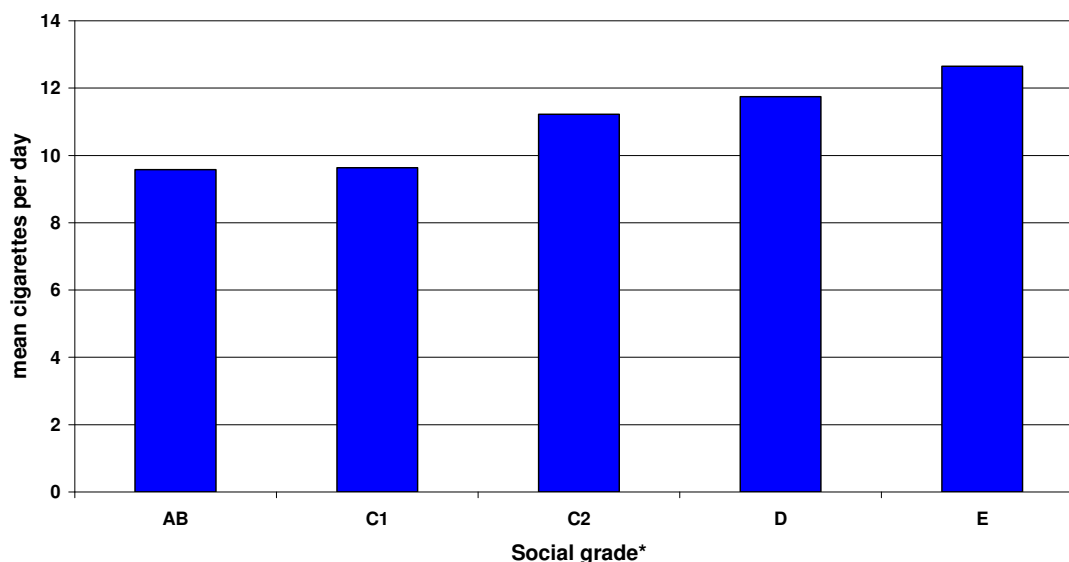
perceived wealth was associated with smoking with 15% of students who thought that their families were ‘well off’ smoking compared with 24% of students who thought that their families were ‘not well off’ (Morgan et al 2006). Socioeconomic status was assessed using a number of measures in the Health Survey for England, and significant associations observed between increased smoking and an index of multiple deprivation, NS-SEC of head of household (similar to registrar general’s social class) and educational attainment. However the Health Survey for England reports present results collapsed into 4-15 year olds and those aged 16 and over, although additional analyses of Health Survey for England data suggest that this is also the case for the 11-15 age range. Sweeting and West (2001) report that the association between smoking and social class varies according to the definition of smoking employed, with a greater consumption of cigarettes showing a stronger relationship with measures of social class. However, no reports have presented data on cigarette consumption by social class. Information on the association between social class and smoking among adults is not broken down by age in either the General Household Survey or Health Survey for England reports, although pooled 1996-2003 Health Survey for England data in the recent ‘Beyond Smoking Kills’ report (ASH, CRUK, BHF 2008) show the expected social gradient in 16-19 year olds, with 18% of those in the most affluent category smoking compared to 53% of those in the most deprived group. Data from the Smoking Toolkit Study have been analysed here to address this issue and show that smoking prevalence among 16-24 year olds increases as social grade decreases, with those in the lowest social grade (E) having 4.5 times the odds of being a smoker than those in the highest social grade (Figure 6). Social grade was also associated with cigarette consumption, with cigarettes per day increasing from 9.6 in social grades A and B to 12.7 in social grade E ( $p < 0.0001$ ) (Figure 7).

**Figure 6 - Percentage of 16-24 year old smokers by social grade:  
Smoking Toolkit Data, November 2006-July 2008**



\*AB=higher and intermediate professional / managerial, C1=supervisory, clerical, junior managerial / administrative / professional, C2=skilled manual workers, D=semi-skilled and unskilled manual workers, E=on state benefit, unemployed, lowest grade workers.

**Figure 7: Mean cigarettes per day among 16-24 year old smokers by social grade - Smoking Toolkit Data, November 2006-July 2008**



\*AB=higher and intermediate professional/managerial, C1=supervisory, clerical, junior managerial / administrative / professional, C2=skilled manual workers, D=semi-skilled and unskilled manual workers, E=on state benefit, unemployed, lowest grade workers.

### 3.5 Smoking by Ethnicity

A higher prevalence of smoking was observed among White students compared with those of Asian and Black ethnicities in the 2007 Smoking, Drinking and Drug Use survey (odds ratios for smoking among Asian and black students compared with white students were 0.44 and 0.13 respectively) (Fuller 2008). Smoking status by ethnicity and age group is not provided in the General Household Survey and low sample sizes in ethnic minority groups preclude any analysis by ethnicity in the latest Health Survey for England reports. However the last Health Survey for England with a 'boosted' ethnic sample in 2004 does provide smoking by ethnicity data for those aged 16-34 (with age categories collapsed to increase numbers). Among men, higher rates of cigarette smoking were observed among Irish participants compared with the general population and lower rates among Indian and Black African participants. Differences among women were more stark with Black Caribbean participants more likely to smoke than the general population (44% versus 28%) and Black African, Indian, Pakistani, Bangladeshi and Chinese participants less likely to be smokers than women aged 16-34 in the general population. Prevalence of other tobacco use, such as chewing

tobacco, was higher among South Asian ethnic groups compared with the general population and Bangladeshi women especially were likely to use chewing tobacco but not smoke cigarettes. However, use of chewing tobacco was lower in the 18-34 age group than among older South Asian smokers (Sproston & Mindell 2006).

### **3.6 Smoking Habits**

The number of cigarettes smoked by younger adolescents is typically lower than among adult smokers, although nicotine intake per cigarette among young people has been shown to be similar to that of adults (McNeill et al 1989). 11-15 year olds were asked in Smoking, Drinking and Drug Use surveys how many cigarettes they have smoked in the last week. In 2007 regular smokers (those reporting smoking at least one cigarette a week) reported an average consumption of 44.1 cigarettes per week and a median of 38 cigarettes per week (Fuller 2008). These cigarettes were smoked throughout the week, but slightly more were smoked on Fridays and Saturdays. The average daily cigarette consumption in 16-19 year olds in 2007 was 10 cigarettes per day among men and 9 cigarettes per day among women while 20-24 year olds reported a slightly higher consumption of 12 cigarettes per day among men and 10 among women (Robinson & Lader 2008). Cigarette consumption continues to increase with age, although there is a general trend of decreased consumption over time (Robinson & Lader 2008).

The type of cigarettes that are smoked by young people has been assessed by both the 2006 Smoking Drinking and Drug use survey (when the focus was on smoking behaviour), and the General Household Survey. Between the ages 11 and 15 most smokers (74%) reported smoking cigarettes from a packet, very few reported smoking mainly hand-rolled cigarettes (6%) and 20% reported smoking both cigarettes from a packet and hand-rolled cigarettes (Fuller 2007). At the older age range assessed in the General Household Survey, again, most 16-24 year olds reported smoking filter cigarettes. However, 23% reported smoking mainly hand-rolled cigarettes, although this is the lower than older age groups in the General Household Survey (Robinson & Lader 2008). In both surveys women were more likely to smoke cigarettes from a packet than men; 81% versus 63% among 11-15 year olds and 83% versus 71% among 16-24 year olds (Fuller 2007, Robinson & Lader 2008). Very few young people reported smoking other forms of tobacco, with 1% of 18-19 year old men and 2% of 20-24 year old men smoking cigars (Robinson & Lader 2008). Females and 17-18 year olds were not asked about other forms of tobacco use in the General Household Survey and the question was not included in the Smoking Drinking and Drug use surveys.

### 3.7 Purchasing Behaviour

At the time of these surveys the legal age of sale of tobacco was 16, although this was raised in October 2007 to age 18. Despite this young people manage to obtain cigarettes, many buying them in retail outlets. The 2006 Smoking Drinking and Drug use survey included a wide range of questions on purchasing behaviour (Fuller 2007). These data show that the majority of 11-15 year old smokers either bought their cigarettes from a shop (65%), typically a newsagent, tobacconist or sweetshop, or were given them by other people (63%), largely friends. Thirty-five percent of smokers reported buying cigarettes from other people, usually friends or relatives, but 17% reported buying from someone else. 14% of smokers usually bought their cigarettes from vending machines. When cigarettes were purchased, young people mostly bought them in packets of 10. Purchasing cigarettes from shops was clearly associated with increasing age, with 31% of 11-12 year olds reporting that their usual source of cigarettes was a shop of some kind compared with 77% of 15 year olds. Regular smokers were also more likely to buy their own cigarettes. This reflects the ease at which older students were able to purchase cigarettes, with only 18% of 15 year olds reporting finding it difficult to buy cigarettes compared with 26% of 14 year olds and 44% of 11-13 year olds. Furthermore, although 53% of students were refused cigarettes at some point (49% of 15 year olds), only 10% of 15 year olds were refused cigarettes at their last attempt. There does however appear to be a trend away from shop purchasing of cigarettes in the last 20 years, as well as from vending machines, with a greater number of students buying cigarettes from other people. On the other hand, younger smokers were more slightly more likely to be given cigarettes (69% among 11-12 year olds, 63% among 15 year olds), as were occasional smokers (76% versus 56%), and girls (66% compared with 57% among boys). Younger smokers were also more likely to find or take cigarettes (Fuller 2007). Questions have recently been added to the Smoking Toolkit Study addressing where 16-24 year old smokers tend to buy their cigarettes. There is currently not enough data to analyse but this will be a useful source of information in the future.

It is difficult to assess the extent to which 11-15 year olds source illicit, smuggled or counterfeit cigarettes. An analysis of data from the Smoking Toolkit Study (ASH 2008) found that 30% of 16-24 year old smokers bought illicit cigarettes, the highest level for any age group. Illicit purchases among adult smokers were highest among the manual socio-economic groups but this was not broken down by age.

Smokers of filter or plain cigarettes are asked what brand of cigarette they smoke in the General Household Survey and in some years of the Health Survey for England. A large number of different



brands are reported, although these are not published in available reports. The tar yield derived from these different cigarettes is however identified, with a large majority of both men and women smoking a brand with a high tar yield (Robinson & Lader 2008). Among women smokers, those in the younger age categories, 16-19 and 20-24, reported greater use of high yield cigarettes than older smokers, although there has been a long term reduction in tar yields of cigarette smoke following legislation in 1992 restricting the maximum yield to 12mg.

The Smoking Drinking and Drug Use Survey does not collect information on the brands of cigarette smoked. However, the Youth Tobacco Policy Survey conducted by the CRUK Centre for Tobacco Control Research (CTCR) collects data on brand use by 11-16 year olds. Regular and occasional smokers were asked to indicate which brands they had smoked in the four weeks prior to the survey. In the period from 1999 to 2006, the top five brands smoked were: Mayfair, Lambert and Butler, Richmond, Benson & Hedges and Sovereign. The popularity of these brands changed across this time period (CTCR, unpublished data).

In 1999, Benson & Hedges, a premium priced brand, was the leading brand among 11-16 year old smokers, with 70% having smoked it in the previous 4 weeks. By 2002, there was a decrease in the proportion smoking this brand (43%) and a further decrease by 2004 (28%). The popularity of this brand was greater if the majority of the smoker's friends also smoked. Benson & Hedges was also more popular among middle class smokers (ABC1) compared with those from working class (C2DE) households. Mayfair, an economy priced brand, was popular throughout, being the second most popular brand in 1999 (59%) and the most popular in 2006 (58%). Popularity increased between 2002 (38%) and 2006 (58%). While there were no differences by gender, age or social grade, regular smokers were more likely than occasional smokers to have smoked this brand in the previous 4 weeks. Lambert & Butler, also an economy brand, was the second most popular brand in 1999 with 31% having smoked it. By 2002, its popularity had increased to 63% and has been maintained (51% in 2004 and 56% in 2006). Popularity of this brand was greater if the majority of the smoker's friends also smoked. Lambert and Butler was also more popular among regular than occasional smokers. Richmond, another economy brand, was launched on the UK market in 1999 and became popular among young smokers. In 1999, 6% of 11-16 year old smokers had smoked this and popularity increased to 39% by 2002. This popularity has been maintained (37% in 2004 and 45% in 2006) and it was the third most popular brand in the 2006 survey. Richmond was also more popular among regular than occasional smokers. There were no differences observed by gender or social grade but popularity decreased among the older smokers. Sovereign, an economy priced brand was popular in 1999 and 2002, smoked by 53% and 37% respectively. Popularity

decreased thereafter to 17% in 2004 and 23% in 2006. Popularity of this brand was greater if the majority of the smoker's friends also smoked. There were no differences observed by gender, age or social grade (CTCR, unpublished data).

Throughout the surveys, young smokers indicated that, on average they had smoked 3.2 brands (std dev 2.18). The number of different brands smoked increased if both the smoker's parents also smoked. With the exception of 2004 where the average was 2.86 (std dev 2.09), the average number of brands smoked remained steady across the four survey waves. Brand loyalty seemed to be low, with the vast majority (ranging from 74% (2004) to 84% (1999)) indicating that they had smoked more than one brand in the previous four weeks (CTCR, unpublished data).

### **3.8 Dependence, Intentions to Quit, and Quit Attempts**

Although younger smokers typically smoke less and are less regular smokers than those in older age groups, dependence on smoking can be established soon after initiation (McNeill 1991). The in-depth 2006 Smoking, Drinking and Drug Use report asked 11-15 year old smokers how addicted they felt they were to cigarettes: 69% of regular smokers reported that they would find it very or fairly difficult to not smoke for a week, and 77% reported they would find it very or fairly difficult to give up altogether (Fuller 2007). Dependence was greater among heavier smokers and those who had been smoking for more than a year. Despite this, young smokers report wanting to give up smoking cigarettes: in 2006 43% of 11-15 year old regular smokers reported that they would like to give up smoking and only 18% did not want to stop at all (these figures have fluctuated in recent years, with a slight trend towards increased desire to quit (Fuller 2005)). 67% of regular smokers had actually made an attempt at quitting smoking and 36% of smokers reported that they had already made an attempt at stopping smoking and would still like to quit. However, only 6% of 11-15 year olds reported themselves as having 'used to smoke'. Just under half of those who had stopped smoking, or who had tried to stop smoking sought some kind of support for their quit attempt. The majority reported asking friends or family for support, but 15% said that they had used Nicotine Replacement Therapy, and 7% had asked an adult at school for support with quitting. Fewer smokers visited their GP, phoned the NHS smoking helpline and used the NHS stop smoking services (all 3%) (Fuller 2007). However, although the number of young smokers attending stop smoking services is lower than in older age groups, 18,546 under 18's set a quit date at a stop smoking service clinic in 2006/2007 and 20,823 set a date in 2007/2008, with 26% and 24% CO

verified success rates at four weeks which were the lowest rates for all age groups (NHS Information Centre 2008).

Among the older age groups 2% of male and female 16-19 year olds and 10% of male and female 20-24 year olds reported that they were ex-regular smokers in the 2007 General Household Survey and 5% of men and 6% of women were ex-smokers in the 2006 Health Survey for England (Craig & Mindell 2008a; Robinson & Lader 2008), although in previous years there has been a greater tendency for females to report being ex-regular smokers than males (Robinson & Lader 2008). Additional analyses of Health Survey for England data show that 67% of male and 76% of female 20-24 year old regular smokers want to give up (difference not significant), and there was no clear difference by measures of SES.

### **3.9 Knowledge and Attitudes About Smoking**

Smoking Drinking and Drug use data in 2006 provides information on both young peoples' knowledge of the dangers associated with smoking as well as their attitudes towards the effect that smoking has on them (Fuller 2007). Nearly all 11-15 year olds were aware that smoking has a number of negative effects; 98% thought that smoking caused lung cancer and 94% thought it caused heart disease, 97% thought smoking harmed unborn babies and 96% thought it harmed non-smokers. 97% of 11-15 year olds also thought that smoking made people's clothes smell. Responses to these questions have remained similar since the early 1990s. Over this time there has been an increased awareness that young smokers get more coughs and colds (79% agreeing with this statement in 1994 compared with 86% in 2006) and that smoking makes people worse at sports (78% agreeing with the statement in 1994, rising to 84% in 2006). Fewer young people agreed with a range of positive statements about smoking; that smoking helps people relax if they are nervous (65%), that smokers stay slimmer (23%), that smoking is not dangerous if you don't smoke a lot (18%), that smoking helps people cope with life (16%) and that smokers are more fun than non-smokers (4%) (Fuller 2007).

There were some gender differences in knowledge and attitudes, with boys more likely to agree with the positive statements about smoking; that smoking helps people relax if they are stressed, that smoking is not dangerous if you do not smoke a lot and that smoking helps people cope with life. In addition boys were more likely to think that smoking makes people worse at sports. There were also differences by age, with younger participants were more likely to think that smoking is

not dangerous if you do not smoke a lot while older participants were more likely to agree with the statements smoking helps people relax, that smokers stay slimmer than non-smokers, that smoking gives people confidence and that smoking helps people cope. This may be a result of increasing personal experience with smoking and smokers were found to agree more with positive statements and less with negative statements than non-smokers (Fuller 2007).

Participants in the Smoking Drinking and Drug Use surveys have also been asked since 1999 whether they think it is OK to try smoking to see what it is like (In 1999 and 2001 the question referred to trying smoking once), and since 2003 whether it is OK to smoke cigarettes once a week. Positive responses to both questions have declined over time with 54% of 11-15 year olds thinking it is OK to try smoking in 1999 and 37% of students agreeing with this statement in 2006. In 2003 25% of 11-15 year olds thought it was OK to smoke once a week compared with 18% in 2006. Girls and older participants were more likely agree with the statements in 2006, probably in line with smoking prevalence (Fuller 2007).

Smoking attitudes among older young people are included in Omnibus Surveys as reported in the National Statistics reports on Smoking-related Behaviour and Attitudes (Lader 2008). In the 2007 report 28% of 16-24 year olds thought that smoking was the main cause of death before the age of 65. Older participants were more likely to identify smoking as a cause of early death. It was generally recognised by young people that smoking causes an increased risk of medical condition among both children (90%) and other adults (91%). These surveys have also assessed opinions regarding recent and planned policy changes. In 2007 between 70% and 96% of 16-24 year olds agreed with smoking restrictions in public places, with the greatest support for restrictions in indoor sports and leisure centres and the least support for restrictions in pubs. Overall 76% of young people agreed or strongly agreed with the new legislation on smoking restrictions in public places. Greater support for the smoke-free legislation was given for places where there are, or are likely to be, children (92%). In both cases older age groups were more likely to show support for these restrictions. As might be expected those aged 16-24 were least likely to agree with the legislation increasing the legal age of purchase of tobacco, however, 76% still agreed or strongly agreed with this legislation and only 9% disagreed or strongly disagreed (Lader 2008). Note however that the attitudes of the younger end of this age group may be more negative, which cannot be observed with the available age breakdown.

### **3.10 Smoking Patterns by Parents, Siblings and Friends**

The 2006 Smoking, Drinking and Drug Use survey provides data on the number of people who smoke in the homes of 11-15 year olds. 52% of these young people reported that they did not live with a smoker, 26% lived with one smoker, 15% lived with two and 6% lived with three or more smokers (Fuller 2007). This question was also asked in the 2004 survey, although the figures have changed little since then when 55% of 11-15 year olds reported that they did not live with a smoker, 25% said that they lived with one smoker, 14% lived with two smokers and 5% lived with three or more smokers. However, if the prevalence of smoking continues to decline in the population, fewer young people will grow up living with smokers (Fuller 2005).

Smoking among young people is strongly associated with living with one or more smokers; in 2006 only 4% of 11-15 year olds who did not live with a smoker reported that they were a regular smoker, compared with 10% of those who lived with just one smoker, 15% of those who lived with two smokers and 25% of those who reported that there were three or more smokers in their household (Fuller 2007). There are less data on this among older adolescents, however, the 2006 Health Survey for England asked 16-24 year old participants if their parents smoked when they were children. Although this does not include other household smokers, or control for other variables, having parents who smoked was associated with a greater likelihood of smoking, with 41% of males and 42% of females who reported that both their parents smoked during their childhood smoking, compared with only 18% and 16% of men and women who reported that they did not have parents who smoked (Craig & Mindell 2008a).

Young smokers are more likely to smoke openly if they live in a smoking household. In 2006 46% of 11-15 year old current smokers smoked openly if they lived in a non-smoking household compared with 76% who lived with three or more other smokers (Fuller 2007). This is paired with a perception of a more lenient attitude towards smoking among families containing smokers; when asked how parents would feel about their smoking 7% of those who live with 3 or more smokers perceived that their parents would do nothing, compared with 1% of those who lived in non-smoking families. Those who lived with smokers were also less likely to perceive that their parents would try and make them stop than those not living in a household with smokers (50% vs. 73%) and more likely to report that their parents would persuade them to stop than those who did not live with smokers (27% vs. 19%). 11-15 year old smokers were more likely to think that their parents would do nothing about their smoking (16%) compared with non-smokers (1%) and older students perceived that their parents would be more lenient than younger students; 6% of 15 year olds

believed that their parents would do nothing about their smoking compared to 1% of 11 year olds and 2% of 14 year olds and there was a trend towards persuasion against smoking as opposed to stopping smoking as age increased. In recent years there has been an overall trend away from a perception that parents would persuade against smoking towards the perception that parents would employ a stricter approach and attempt to stop them smoking (Fuller 2007).

When young people are asked how many of their friends smoke, 11-15 year olds over estimate how many people their age are actually smokers. For example, 45% of 11-15 year olds thought that half or more of people their age smoked. The correct answer ('only a few') was identified by 41% of the sample (Fuller 2007). This overestimation was similar in both the 2004 and 2005 surveys (Fuller 2005; Fuller 2006). Not surprisingly, smokers were more likely to overestimate smoking prevalence among their peers than non-smokers, although all students showed some overestimation. For example, at age 15 29% of the sample in 2006 reported that they smoked. However, 63% of non-smokers reported that half or more of people their age smoked, but 83% of occasional smokers and 93% of regular smokers made this overestimation (Fuller 2007).

### **3.11 Conclusions**

Different national surveys employing different definitions of smoking are used to collect data on smoking behaviour in the 11-15 and 16-24 age groups. This makes it difficult to draw conclusions that apply across the 11-24 age range and also what happens in the transitional period in the mid-teens when many young people leave school and go on to further education, training and/or (un)employment. However, some clear patterns and trends in smoking in young people in England emerge:

- Trends: among 11-15 year olds ever and current/regular smoking has declined since the 1980s. Smoking rates were relatively stable in the early 2000s but appear to have declined in 2007. Among 16-24 year olds smoking has been declining since the 1970s including in recent years.
- Age: smoking prevalence and consumption increases through the teens into the mid-twenties. The 20-24 years group has the highest smoking prevalence of any age group.
- Gender: girls' smoking prevalence overtakes boys' at 13, but young men overtake young women in late teens and early twenties.
- Socioeconomic status: there are limited published national data on this. While the picture is not as clear as for adults, most of the available data show that smoking in young people in

England is related to SES. There is some evidence that 11-15 year olds with lower SES have a higher smoking prevalence and that smokers with lower SES start smoking regularly at a younger age i.e. under 16. A clear social gradient is found in the 16-19 year old age group. Data from the Smoking Toolkit study show a strong relationship in the 16-24 years age group between smoking prevalence and consumption and SES.

- Ethnicity: there are limited data but in general they show that there is higher smoking prevalence among White young people (especially males) compared to other ethnic groups, though some ethnic groups also use other forms of tobacco.
- Consumption: young people on average smoke less than adults with consumption increasing with age. Most smoke manufactured filtered cigarettes, though hand-rolling increases with age.
- Sources of cigarettes: among 11-15 year olds the main sources are friends, family and shops (mostly purchasing packs of 10s), with the balance shifting with increasing age towards shops. Smokers report little difficulty in purchasing illegally at 15, though this has declined in the last 20 years. There is currently no available information on the impact of the increase in the age of sale to 18 years or the sources of cigarettes in the 16-17 year age group. There are limited data that suggest smuggled cigarettes may be an important source for 16-24 year olds.
- Dependence and cessation: most 11-15 year old regular smokers feel dependent on smoking, around half would like to quit and many report that they have tried, though only a minority have sought support to stop. The prevalence of ex-smokers increases with age among 16-24 year olds. The majority of smokers in this age group report that they want to quit, with there being no difference by sex or SES.
- Attitudes and beliefs: 11-15 year olds are mostly negative about smoking with nearly all believing that it is harmful to health, though more positive beliefs about the potential benefits increase with age.
- Families and friends: just under half of 11-15 year olds live with smokers. 11-15 year olds whose parents smoke are both more likely to be smokers and to smoke openly at home. They are also more likely to smoke if their friends are smokers and 11-15 year old smokers overestimate the prevalence of smoking among their peers.

## **4. WHAT IS KNOWN ABOUT WHY YOUNG PEOPLE START AND CONTINUE TO SMOKE**

### **4.1 The Process of Becoming a Smoker**

Becoming a smoker is a process which can last from several weeks to many years. Research studies often characterise this process as involving several different stages as adolescents move from never having smoked to experimentation, habituation/addiction and finally maintenance or regular ‘adult’ smoking (Goddard 1990). This may also include being an ex-smoker or having quit. These stages are identified by various criteria including previous smoking history, levels and patterns of consumption, and measures of addiction and/or dependence. While for some young people this is a linear progressive pathway marked by increasing regularity and levels of smoking and addiction, for others this is not the case and they may move back and forwards between these stages or categories before their final smoking or non-smoking status is established. Thus there may be gaps of many months or even years between periods of smoking. This poses challenges not only for understanding and interpreting research on the factors influencing this process but also for studies assessing the impact of youth smoking prevention and cessation policy and interventions.

The following sections consider the factors that have been found to influence whether young people start and continue to smoke. These have been grouped into three levels of influence using a model (Figure 8) developed by one of the authors, an earlier version of which was included in the Scottish Smoking Prevention Working Group’s report ‘Towards a Future Without Tobacco’ (Scottish Executive 2006). The three levels of influence are: individual (including socio-demographic, attitudinal and behavioural), social and community (including family, friends, school), and societal (including access, media, social norms and tobacco marketing).

### **4.2 Individual Factors**

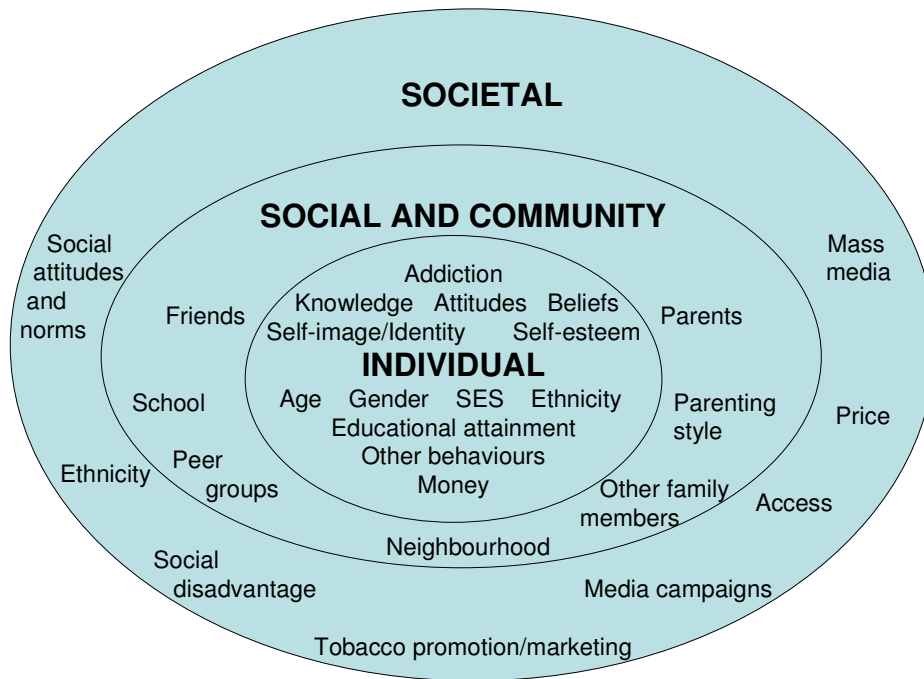
#### **4.2.1 Age and Development**

##### UK studies



The national English survey data reported in Section 3.3 show a clear increase in smoking prevalence with age. This is also found for other parts of the UK and in other countries including reviews which examined age specifically in terms of young people and smoking. The longitudinal Edinburgh Transitions Study found that weekly smoking in their cohort increased from 3% at age

**Figure 8: Factors associated with smoking in young people**



12 years to 30% when followed up 5 years later at age 17 years (Smith 2005). In the MRC Twenty-07 study, which followed up 15 year olds in the west of Scotland from 1987, the proportion who smoked at least 10 cigarettes a day increased from less than 5% at 15 years to more than 20% at 18 years and an even higher proportion at 25 years (Sweeting & West 2006). While prevalence and amount smoked increases with age, as noted in Section 3.3, young people's smoking trajectories vary. The Edinburgh Transitions study found that 64% of smokers at 12 were still smoking a year later and 69% 5 years later. The degree of continuity of smoking increased markedly with age. The author argued therefore that smoking prevention should not focus only on those who start smoking young, as those in this study who started at ages 15-16 were particularly likely to continue (Smith 2005). The longitudinal MRC Twenty-07 study, which followed Scottish adolescents into young adulthood found that 2% of the sample who had been smoking at 15 had stopped at age 18 and 6% who were smokers at age 18 had stopped at age 23 (Sweeting & West 2006).

van Jaarsveld and colleagues (2007) looked at the impact of pubertal timing on smoking trends in adolescence as part of the HABITS study (Health and Behaviour in Teenagers Study) which followed a cohort of 11 to 12 year olds in South London for five years. Early-maturing adolescents' smoking rates were higher through adolescence and remained significant at 16 years. No evidence was found that the later-maturing adolescents 'caught up' when they reached puberty.

#### **4.2.2 Socioeconomic Status and Disadvantage**

There was limited national survey data on the relationship between smoking and young people's socioeconomic status (see Section 3.4).

##### Reviews

In their review, Hanson and Chen (2007) identify 44 studies that included an examination of the association between SES and cigarette smoking in ten to 21 year olds in Western countries published between 1970 and 2007, the majority of which found a negative association between SES and cigarette smoking. Closer examination of the 21 high quality studies did not find a strong moderating effect of gender or ethnicity on the SES and cigarette smoking association however age appeared to have an effect. In the high quality studies, the negative relationship between SES and smoking appeared more consistently in younger adolescents (10 to 14 years) than older adolescents (15 to 21 years). The authors also observed that in four of the five high quality studies which found a positive relationship between SES and adolescent cigarette smoking, a resource-type SES measure was used (rather than a social status SES measure) which may suggest that the studies that found more smoking in high SES groups could have been related to the adolescents' access to financial resources for cigarette purchases (Hanson & Chen 2007).

##### UK Studies

Graham and colleagues (2006a,b) reviewed and analysed how social disadvantage at different stages in the lifecourse adds to women's risk of being a smoker. The objectives were to investigate how the link between social disadvantage and persistent smoking develops from childhood, through adolescence and early adulthood and into midlife. The researchers found that smokers in the UK from deprived childhood circumstances were more likely to be current smokers; and a woman with an unskilled manual background in childhood was more than twice as likely to be a smoker as a woman from a professional/managerial background; for men it was more likely to be their adult rather than childhood socioeconomic position that had an effect on persistent smoking behaviour

(Graham et al 2006a, Power et al 2003). For women four lifecourse markers of disadvantage were significantly associated with current smoking: childhood disadvantage, educational disadvantage (leaving school at the minimum age), early motherhood (under 22 years) and current disadvantage. Each marker of disadvantage independently added to the risk of being an adult smoker (Graham et al 2006a).

The secondary school phase (with 12-16 year olds) of the Liverpool Longitudinal Study on Smoking also supports the negative association between SES and smoking status (Woods et al 2008). At the age of 13 years, social, economic and housing indicators combined into an index of multiple deprivation scores increased the risk of having smoked in the previous week by 96%, and a higher deprivation score was a predictive factor in adolescent smoking. The prevalence of parental smoking in the sample was highest amongst those working in the lower occupational groups (Woods et al 2008). Socioeconomic status was associated with a higher risk of smoking in Viner et al's (2006) study conducted in 2001 with East London adolescents.

The 2006 SALSUS national survey in Scotland found that 13 and 15 year old regular smokers were twice as likely to get free school meals as other pupils (Maxwell et al 2007).

In terms of other disadvantaged groups of young people in England, nearly one third (32%) of 11 to 17 year olds looked after by local authorities in were current smokers (answered in the affirmative to whether they smoke at all these days) and just over one third (36%) had never tried smoking (Meltzer et al 2003). Overall, 69% of children in residential care were current smokers, which Meltzer and colleagues suggest may reflect the greater proportion of older children in these placements.

#### **4.2.3 Gender**

The national survey data demonstrates that smoking prevalence in girls overtakes that of boys at age 13 years, but young men overtake young women in late teens and early twenties (see Section 3.2).

#### Reviews

No recent reviews were identified which looked specifically at the influence of gender on smoking uptake and continuance, though one review concluded that our understanding of how gender influences smoking remains limited (Kobus 2003).

### UK Studies

Recently published studies conducted in the UK include a qualitative study with 15 to 16 year old smokers in Edinburgh ( $n=46$ ) in 2002 which demonstrated the different ‘identity work’ that male and female adolescents undertake to achieve a socially and culturally acceptable image and the ways in which smoking was used to achieve this (Amos & Bostock 2007). It also showed how smoking had different functional roles for female and male smokers in both creating and sustaining social relationships and dealing with negative feelings. A study of Scottish 11 and 13 year olds found that peer group structure, described by young people as hierarchical, was closely related to smoking behaviour and this was different for boys and girls (Michell & Amos 1997) (see Section 4.3.4).

A comparative study with 14 to 15 year olds surveyed in the same area in England in 1985 and repeated in 2005 found that the 1985 male sample smoked, truanted, fought, vandalised, stole and took drugs significantly more than the girls, but by 2005 the female sample smoked, drank and used cannabis significantly more than the boys (Pritchard & Cox 2007).

A drinking, smoking and drug-taking prevalence study in 2001 with 6,020 15 and 16 year olds at state, grammar or independent schools in Oxfordshire, Northamptonshire and Birmingham found that females were more likely than males to report smoking (six or more cigarettes in a typical week), however amongst smokers, males were significantly more likely to be heavy smokers (more than 21 cigarettes in a typical week) (Rodham et al 2005). Conner et al’s (2005) study also confirms 15-16 years girls smoking more than boys.

Studies by Graham and colleagues (Graham et al 2006a,b) have shown that young women’s domestic trajectories and circumstances are important risk factors for being a smoker in early adulthood. Women who had had a baby under the age of 21 had a considerably higher risk of being an adult smoker than those who were not mothers. The odds ratios were even higher for those who had had their first child before they were 20.

#### **4.2.4 Ethnicity**

### UK Studies

The national surveys provide limited data on the relationship between ethnicity and smoking prevalence in young people but generally show a higher prevalence among White young people, particularly males, in comparison to other ethnic groups (see Section 3.5). The drinking, smoking

and drug-taking prevalence study by Rodham and colleagues (2005) in 2001 with 6,020 15 and 16 year olds at state, grammar or independent schools in Oxfordshire, Northamptonshire and Birmingham found that fewer Asian and Black females reported smoking compared to White females. No significant differences in smoking behaviour were found between males of different ethnic groups and White males (Rodham et al 2005).

Bradby & Williams' (2006) smoking (and alcohol and illegal drugs) prevalence study of British-born South Asians (from Pakistan, India and Bangladesh) (94% of sample) and non-Asians in Glasgow aged 14 and 15 years took baseline measures of having ever tried substances and quantities consumed in 1992 and at follow up in 1996 after having left school at ages 18 to 20 years. Analysis showed that on almost every measure of having tried tobacco, alcohol or drugs or being current users, Asian young people aged 14 to 15 and 18 to 20 years reported significantly less regular use or experimentation than non-Asian young people. The only exception was the percentage of Asian men who reported ever having smoked, rising from low levels in 1996 to a level of average weekly consumption not significantly different from non-Asian men four years later (Bradby & Williams 2006). When analysed by religion, there were no significant differences for men's smoking; Sikh/Hindu women reported less experimentation with tobacco than Muslim women, although both groups' current smoking levels were small compared to Christian women's.

A cross-sectional study conducted in urban areas of the Midlands in 1997 with Year 8 pupils (12-13 years) at mainstream secondary schools serving disadvantaged communities, aimed to identify how ethnicity influences the smoking intentions of disadvantaged UK African-Caribbean, Indian, Pakistani and white young people (Markham et al 2004). The study found that future smoking intentions varied by ethnicity and gender: there was a small difference in intention among boys between ethnic groups but relatively larger differences among girls. Using a model based on attitudes, social influences and self-efficacy, the authors confirm that ethnicity may be used as a descriptive demographic characteristic that has a direct influence on smoking intention.

Viner et al 2006's analysis of data from a 2001 study of 2,789 adolescents from school Years 7 and 9 of which 73% were non-Caucasian and 21% born outside the UK, from three regional authorities in East London found an increased risk of regular smoking was associated with living with fewer than two parents, poor mental health, having a long-standing illness and being obese. Decreased risk of regular smoking was associated with birth outside the UK, Muslim religion and Bangladeshi, Pakistani, Indian, Caucasian other, and black African ethnicity (Viner et al 2006).

Qualitative research in 1999 with 47 Asians (able to trace their origins from Pakistan or India) aged between 16 and 26 years living in Glasgow explored the role of religion, ethnicity, gender and generation in the uptake or avoidance of tobacco (and alcohol). The study found that smoking was rarer than drinking among Asian girls and women whereas numerous men were public smokers (Bradby 2007). The ‘community mentality’ regulated girl’s and young women’s image and honour, with smoking seen as shameful and unladylike, and young women’s reputations were felt to be at risk from gossip. In terms of religious affiliation, within the general disapproval of smoking, there were degrees of attributed censure: Islam being the most tolerant of tobacco and Sikhism the least tolerant, although smoking was not seen as a strong risk to a religious identity (Bradby 2007). A second qualitative study conducted in 2002 in Tower Hamlets, London, with 81 Bangladeshi male smokers aged between 18 and 63 years; 50% of whom were aged 18-29 years found that younger participants indicated that the impetus to start smoking came from parental or school peer influences and continued smoking was supported by anxieties about racial attacks and verbal harassment (Croucher & Choudhury 2007).

#### **4.2.5 Educational Attainment, Aspirations and Engagement**

##### UK Studies

Low intelligence, poor educational attainment and disengagement from school influence smoking. Data from the English 2002 survey cohort of the Health Behaviour in School-age Children (HBSC) on social support in school found that students in years 7, 9 and 11 who said they couldn’t get extra help at school when they need it were more likely to be smokers than those who could get help when they need it (29% vs. 13%) (Morgan et al 2006; see also Section 2.1 for further information on the survey). The figures on likelihood of being a smoker were similar for whether parents do not help out a student if there is a problem at school compared with those that do help out (28% vs. 15%). In terms of student engagement with school, 25% of students with a low sense of belonging at school smoke cigarettes versus 14% with a higher sense of belonging, across all age groups (Morgan et al 2006).

Secondary analysis of 1999 ONS survey of the *Mental Health of Children and Adolescents in Great Britain* (Meltzer et al 2000 as cited by Emerson & Turnbull 2005) with a sample of 4,164 11 to 15 year olds and their primary carer was conducted to assess self-reported levels of smoking (and alcohol use) among adolescents with intellectual disabilities. As the ONS did not measure if children and adolescents had an intellectual disability, survey items were combined to highlight

adolescents likely to have an intellectual disability and 95 (2.8%) of the original sample were identified this way (Emerson & Turnbull 2005). This sub-sample had a greater proportion of boys and adolescents living in poverty compared to the non-intellectually disabled group. Self-reported rates of being a current smoker (not defined in the paper) were significantly higher among adolescents with intellectual disabilities. However the self-reported rates of smoking  $\geq 7$  cigarettes/day or having ever smoked more than once were similar for the two groups. For the sub-sample of intellectually disabled adolescents, being a current smoker was solely associated with having a diagnosable psychiatric disorder and experiencing poverty (Emerson & Turnbull 2005).

The Drug Use, Smoking and Drinking Among Young People in England survey data from 2007 (Fuller 2008; see also Section 2.1 for further information on the survey) found that 11 to 15 year old pupils who reported having been excluded from school were more than twice as likely to report smoking at least one cigarette per week than those who had not been excluded. A similar relationship existed for pupils who had played truant from school. This trend is akin to that found in Markham and colleagues (2008) study of schools in the West Midlands where a low truancy rate was associated with lower school smoking prevalence (see also Section 5.1.2). And in an attempt to identify predictors of transitions in stages of smoking progression, Mayhew and colleagues' (2000) review notes that there is evidence from the included studies, for lower expectations for school achievement or less educational achievement being influencing factors on young people's smoking behaviour.

In the Scottish SALSUS survey for 2005/6 regular smokers had much lower educational aspirations and expectations with 24% of 13 year old and 19% of 15 year old regular smokers expecting to go on to university compared to 50% and 49% respectively of non-smokers (Maxwell et al 2007).

#### **4.2.6 Knowledge, Beliefs and Attitudes**

##### Reviews

A review of adolescents' and young adults' perceptions of tobacco use conducted in 2005 to inform tobacco control policy in the USA found that in general adolescents understood that there are risks associated with smoking; in particular the consequences stressed by public health campaigns (e.g. risks of lung cancer, heart attacks and other health outcomes) (Halpern-Felsher et al 2007). However, the reviewers found conflicting evidence about how adolescents understand the nature of the risks: for example, in comparison to other risks such as alcohol use or getting hit by a car, or to

the cumulative risk of smoking on health, or the risk and nature of tobacco addiction. Also to what extent their knowledge or understanding of the risks either hinders or prompts their decision to smoke. There is a strong suggestion in the literature that young people's decisions to smoke are not just based on long-term health risks but on social consequences (such as getting into trouble, smelling of tobacco smoke) and the perceived benefits smoking has on stress reduction and increased concentration levels (Halpern-Felsher et al 2007).

An intended systematic review of young mother's (under 20 years) perspectives on their smoking behaviour was halted due to lack of available qualitative, English-language studies published between 1990 and 2003 (McDermott & Graham 2006). Despite using an extensive and rigorous search strategy, only two studies met the inclusion criteria, one from Australia and one from the USA (Wakefield et al 1998, Lawson 1994 both as cited by McDermott & Graham 2006). As the authors highlight, a consistent finding of qualitative studies of low income mothers of all ages, is that whilst they are aware of the health risks to them and their children, these mothers experience smoking as a vital resource for caring for their children in circumstances marked by chronic disadvantage (McDermott & Graham 2006).

### UK Studies

A longitudinal UK study with children from secondary schools in the Local Education Authority in Leeds repeatedly followed-up since age 11 and 12 years to 15 and 16 years included an assessment of the extent to which measures of thoughts and feelings in relation to smoking taken in early adolescence were predictive of smoking initiation in later adolescence (Conner 2005, Conner et al 2006). Using the baseline data from 11 and 12 year olds, anticipated regret about smoking was an important predictor of smoking intentions over and above attitudes, subjective norms and perceived behavioural control; in the non-smoking sample, anticipating feeling regretful about it after smoking was strongly associated with intending not to smoke in the future (Conner et al 2006). When the adolescents were followed up 9 months later, stronger intentions not to smoke were associated with lower levels of subsequent smoking. In addition the relationship of smoking intentions to smoking behaviour was moderated by regret and intention stability (i.e. whether the intention remained stable between it being measured and the time the behaviour is performed) (Conner et al 2006). The four year follow-up also found that among those who anticipated high levels of negative emotional reactions after smoking, intentions not to smoke were significant predictors of smoking four years later. Similarly, for those with stable intentions, intentions were found to significantly predict smoking behaviour four years on (Conner 2005). Behaviour predictions were relatively weak, although the chance of someone smoking at ages 15 to 16 years



increased if they were female and had smoked when younger. The chances of a non-smoker at 13 to 14 years taking up smoking by 15 to 16 years increased if they had a positive attitude towards smoking, if they lived with smokers, had more friends who were smokers than non-smokers, and if they were female (Conner et al 2005).

Using an extended model of the theory of planned behaviour and the baseline and three months follow-up data of the same study, the authors found that smoking behaviour was primarily determined by past smoking behaviour (ever smoking over the last school term), followed by perceptions of self-control over not smoking and knowing members of the immediate family (including step-parents, step-siblings and grandparents) and friends who smoke (McMillan et al 2005).

#### **4.2.7 Self-image and Self-identity**

##### UK and Non-UK Studies

Studies have shown how adolescence is a period of developmental change and transition during which young people engage in the active construction of their gendered adult identities (Stjerna et al 2004, Nichter et al 2006). Active in that this involves decisions not only about who they want to become, as well as what is feasible and acceptable, but also how such an image can be projected or 'performed' in particular social contexts (Plumridge et al 2002). Qualitative studies on self-image and identity in the US, UK and New Zealand have revealed the importance for young adolescent smokers of smoking as a means of enhancing their social identity and status (Plumridge et al 2002, Denscombe 2001, Glendinning 2002, Michell & Amos 1997, Michell 1997).

Several studies have found that where smoking status is central or salient to the social identity of a peer group, peers are likely to share similar smoking behaviours (see Sections 4.2.7 and 4.3.4). Furthermore gender, smoker identity and peer group structure can interact (Michell & Amos 1997, Michell 1997, Nichter et al 1997). A study of Scottish 11 and 13 year olds found that peer group structure, described by young people as hierarchical, was closely related to smoking behaviour and this was different for boys and girls (Michell & Amos 1997). Smoking was most common among 'top' girls who were described as 'good-looking', 'popular', 'loud' and 'cool' and used smoking as a marker of their membership of this group, and by 'bottom' girls who smoked to be like top girls and attain their status. In contrast high status boys were less vulnerable to smoking as it conflicted with their wish to be fit and they could secure a 'cool' identity through other activities, notably sport. Similarly Plumridge et al's research with 13-14 year olds in New Zealand (Plumridge et al

2002) and a qualitative study of 15 year olds in Scotland (Amos & Bostock 2007) found that for boys, but not girls, sport presented an alternative to 'smoker coolness'. Girls by contrast did not describe alternative ways of achieving similar 'cool' school based identities.

A further study using the qualitative data from mid- to late-teens smokers from Scotland in 2002, explored the 16 to 19 year olds' understanding of how transitions from school to work, further education, employment or unemployment impact on their smoking behaviour (Wiltshire et al 2005). Smoking behaviour was increased and reinforced by these transitions, as it became the 'marker of an acceptable identity' in the new situations and was important in the new context for establishing social relations (Wiltshire et al 2005).

A recent USA study examined tobacco-use characteristics associated with self-identification as a regular smoker plus cessation intentions of college students who currently smoked (Harris et al 2008). Self-reported regular smokers were more likely to have smoked before starting college, to smoke more cigarettes, and to smoke within half an hour of waking compared with current smokers who did not consider themselves regular smokers.

#### **4.2.8 Self-Esteem**

##### Reviews

No recent reviews on self-esteem and smoking were identified. However a critical review of the literature on psychosocial factors related to adolescent smoking concluded that high self-esteem was consistently associated with smoking (Tyas & Pederson 1998). This review only included studies published up to 1996 and only three studies included relating to self-esteem.

##### UK studies

A study which analysed data collected from a national survey of Scottish 13-14 year olds in 1996 and a Scottish rural sample of 13-14 year olds in 1996 (Glendinning & Inglis 1999), found that there was an association between self-esteem, peer groupings and smoking. Among 13-14 years those categorised as 'socially isolated' reported low levels of self-esteem and smoking, those in the 'conventional' category had high levels of self-esteem and low levels of smoking, while those who were 'peer orientated' had high levels of self-esteem and smoking.

An analysis of longitudinal data from the British Household Panel Study found that general self-esteem at ages 12-14 years was linked to smoking experimentation and smoking in the following

few years (Glendinning 2002). However, there was a less strong association between self-esteem in early adolescence and smoking in later adolescence (19-20 years old). The author argued that this was partly due to contextual factors, specifically the peer group context, and the meanings that smoking has for different peer groups.

#### **4.2.9 Mental and Emotional Health**

##### Reviews

No recent reviews on mental health and smoking were identified. Tyas and Pederson's 1998 review of the psychosocial factors related to adolescent smoking concluded that stress and associated distress or depression are associated with smoking initiation and maintenance (Tyas & Pederson 1998). They also reported that several studies had reported that smoking was used by young smoking as a coping mechanism.

##### UK and Non-UK Studies

No studies were identified from the UK in the literature searches providing evidence for a relationship between smoking and mental health. However several qualitative studies found that young people reported using smoking as a coping strategy and that relapse from quitting was sometimes attributed to difficult emotional and social problems, life events and transitions (Wiltshire et al 2005, Amos and Bostock 2007). The 2006 Smoking, Drinking and Drug Use survey also found that regular 11-15 year old smokers were twice as likely to believe that smoking helped people cope better with life as non-smokers (30% compared to 16%) (Fuller 2007).

There was evidence from European and Australian studies (Dudas et al 2005; Patton et al 2006 as cited by Sandford 2008) showing links between anxiety and depression in teenagers and smoking behaviour and likely nicotine dependence.

#### **4.2.10 Dependence and Addiction**

##### Reviews

The leading medical authorities who have reviewed the evidence worldwide have concluded that tobacco products are highly addictive and the severity of the addiction, the adverse health risks and the persistence of use are all particularly high with tobacco (Royal College of Physicians 2007).

No recent reviews of quantitative studies on nicotine addiction and dependence and young people were identified. A systematic review of English language qualitative evidence published up to 2002 on adolescents and tobacco use included 19 studies in its narrative analysis of dependence and addiction, four of which were from the UK (Walsh & Tzelepis 2007). There was considerable variation in the concentration given by adolescents to the issues of dependence and addiction in the qualitative studies and adolescents' views appeared to be mediated by age and smoking status. From the narrative analysis, where the issue arose, adolescents seemed generally aware of the addictive nature of tobacco, specifically nicotine. Younger adolescents' and older non-smoking adolescents' views of dependence were frequently shaped by observing parents, other family members or friends who were perceived as exhibiting addiction symptoms, especially when trying to quit. Although dependence was perceived as a potentially negative consequence by young people, they did not see nicotine dependence as personally relevant, especially at a younger age or early on in the smoking career. In a couple of studies, some believed that dependence occurred quickly; another theme covered by two studies with female smokers was the 'unanticipated nature of addiction' for female smokers. Although addiction was largely seen as negative by respondents in the studies, adolescent smokers balanced it against the pleasurable aspects of smoking or, in a couple of studies, it was seen as positive by smokers; for example as a craving for an attractive substance, or being tough or taken seriously as an adult (Walsh & Tzelepis 2007). When comparing the relationship between this qualitative evidence and that from the quantitative literature, the qualitative literature supports the psychopharmacological research on nicotine dependence that adolescents' perceptions of the issue are influenced by age and smoking status (Walsh & Tzelepis 2007).

### UK Studies

A qualitative study on young people's smoking attitudes and behaviours and the ways smoking is located in social relationships with 99 16 to 19 year olds in Lothian, Scotland in 2002 (and published since the Walsh & Tzelepis review's cut-off date) found that most respondents were unsure about whether they were addicted or not and were ambivalent about it (Amos et al 2006). Instead, most felt that they smoked particular cigarettes habitually, although some felt the 'need' to smoke, e.g. the first of the day. As reported above, only a minority felt that they were wholly addicted to smoking cigarettes after having experienced withdrawal symptoms, for example (Amos et al 2006).

Fidler and colleagues (2006a) looked at development of smoking behaviour with young people who had started smoking at age 11 years as part of the HABITS study (Health and Behaviour in

Teenagers Study) which followed a cohort of 11 to 12 year olds in South London for five years. The authors found prospective evidence that 11 year olds who reported trying smoking cigarettes just once and were not currently smoking were at significantly greater risk of becoming a current smokers even after up to three years of non-smoking behaviour in between.

### Non-UK Studies

In the USA, an extension of the DANDY (Development and Assessment of Nicotine Dependence in Youth) study looked at factors in nicotine dependence with a 6<sup>th</sup> grade cohort over four years using structured interviews and saliva tests. The researchers found that the most susceptible youths lost autonomy over smoking (i.e. quitting became unpleasant or difficult) one or two days after inhaling their first cigarette (DiFranza et al 2007a). The characteristics which predicted this loss of autonomy included: feeling relaxed from the first time from inhaling a cigarette and a depressed mood (DiFranza et al 2007b). Dependence on tobacco was predicted by feeling relaxed at the first cigarette, a depressed mood, familiarity with Joe Camel (a cartoon character used to market Camel cigarettes) and novelty-seeking (DiFranza et al 2007b). A New Zealand study measuring loss of autonomy in 14 to 15 year old smokers surveyed annually from 2002 to 2004 confirmed these findings, concluding that that diminished autonomy appeared soon after the onset of intermittent tobacco use and developed in relation to the total amount of cigarettes smoked (Scragg et al 2008).

The qualitative research with adolescents suggests that the ‘loss of autonomy’ message may be difficult to communicate, especially to occasional smokers or those who make slow progress to regular smoking. Consequently, this may explain why adolescents (especially younger adolescents) perceive dependence and addiction to be relevant only to adults; a finding from the qualitative studies reviewed by Walsh & Tzelepis (2007).

## **4.2.11 Other Substance Use: Alcohol, Cannabis and Other Drugs**

### Reviews

A systematic review of cohort studies on cannabis use (published up to 2004) investigating factors associated with the onset of cannabis use identified 13 high quality studies with young people (up to 21 years old), and found tobacco consumption was identified as a factor in uptake in five of the studies, and alcohol consumption was a factor in five studies (Guxens et al 2007). There has been a convergence in the factors relating to the consumption of the three substances in recent years and factors associated with initiation are common to tobacco, alcohol and cannabis use which may

explain why consumption may start at around the same time. Alternatively, the authors describe a 'stepping stone' model, explaining the relationship by a putative progression in consumption starting with the legal substances (Guxens et al 2007).

A review of the empirical studies of predictors of transitions in stages of smoking progression included evidence published up to 2000, identifying other drug use as a factor related to adolescent smoking in a number of studies (Mayhew et al 2000).

### UK Studies

Several studies have found individual associations between smoking and alcohol and drug use, as well as a clustering of these behaviours in young people. The 2007 national survey 'Drug Use, Smoking and Drinking Among Young People in England' (Fuller 2008) found that in 15 year olds two-thirds of those who had smoked in the previous week had also drunk alcohol compared to only a third of those who had not smoked. The association between smoking and taking drugs was even more marked with over half (53%) of those who had smoked in the previous week having taken drugs compared to less than one in ten (8%) of those who had not smoked. Rodham et al (2005) found considerable overlap between cigarette, alcohol and drug consumption in their prevalence study of English 15 and 16 year olds; of the 59% reporting such behaviours, 2.3% reported smoking, 3.7% smoking and drinking, 3.5% smoking and drug taking and 14.2% reported all three.

Data from the European Smoking Prevention Framework Approach (EFSA) study from 1998 to 1999, found that alcohol and tobacco use were reciprocally associated with each other, with smoking behaviour generally predicting subsequent alcohol use across the six European countries (Denmark, Finland, The Netherlands, Spain, Portugal and the UK) (Wetzels et al 2003).

McCambridge and Strang's (2005a) early data from a study with young drug users in London found that age of initial cigarette smoking was a significant predictor of age of first cannabis use which was, in turn, predictive of age of first stimulant drug use among those using both drugs.

A qualitative investigation of young people's cannabis and tobacco use by Amos et al (2004) used data collected in 1999 from research with 15-16 year old ( $n=46$ ) and 16-19 year old ( $n=99$ ) smokers living in Scotland. For some smokers in their mid- to late-teens, cannabis use and smoking were linked in significant ways: smoking cannabis in joints had been an introduction to smoking cigarettes. Regular cannabis use appeared to reinforce cigarette use and impede quitting; most said they wanted to stop smoking and few intended to stop using cannabis, although little thought was

given to how this could be achieved while still smoking cannabis with tobacco. Among the participants, who were evenly split by gender, cannabis smokers seemed more likely to be male (Amos et al 2004). This was also found in an evaluation of the effectiveness of pilot youth cessation projects in Scotland; the dual use of tobacco and cannabis proved to be an issue for several projects and not wanting to give up cannabis use impacted on the likelihood of giving up cigarettes (Platt et al 2006).

Viner et al (2006) found that co-occurrence of regular smoking, drinking and drug use was significantly less common in Bangladeshi, Pakistani, Indian, Caucasian other, black African and black British young people compared with Caucasian British young people when age, gender and SES were controlled for.

Several qualitative studies have also found that throughout adolescence drinking alcohol is reported by young smokers as being associated with increasing levels of tobacco consumption (Amos & Bostock 2006) and causes for relapse while attempting to quit smoking (Amos et al 2006, Platt et al 2006). As for the findings above for cannabis and tobacco smoking, cigarette smoking and drinking alcohol together are taken as a cultural norm amongst the peer group becoming a significant barrier to quitting.

Health-damaging behaviours such as smoking, substance misuse, unsafe sex, unhealthy eating habits and lack of physical activity (see Section 4.2.12), often occur in clusters in young people. Young people from poorer socioeconomic groups typically have fewer opportunities to maintain and promote their health and tend to have increased exposure to health-damaging behaviours (Currie et al 2008).

#### **4.2.12 Other Health-related Behaviours: Diet, Dieting and Physical Activity**

##### Reviews

A review of English language studies reporting on any quantitative association between smoking and body weight or concerns about body weight in young people up to 20 years old was conducted for material published up to February 2003 (excluding clinical samples of adolescents with eating disorders) (Potter et al 2004). The review includes 55 studies including four British studies rated as of moderate quality, with the majority from North America. The authors find some evidence to support a positive relationship between smoking and body weight amongst adolescents but not in all

the studies and gender patterns are inconsistent. The literature does support a positive relationship between weight concern and smoking amongst adolescents but dependant on the 'dimension' of weight concern studied (e.g. perceived weight, general weight concerns, dieting behaviours, restrained eating or disordered eating symptoms/attitudes). Potter and colleagues conclude that the evidence points most clearly to a positive association between smoking and dieting behaviours. In terms of gender, a more consistent relationship was found for dieting behaviours, disordered eating and general weight concerns and smoking among female adolescents than for males (Potter et al 2004).

Mayhew et al's (2000) review of stages in the development of adolescent smoking identified concerns with body weight as a variable related to experimental and regular cigarette use. Jenks & Higgs' (2007) laboratory study with a sample of 30 female university undergraduates (18 to 24 years old) from Birmingham examined their smoking topography (such as number of puffs and the time between inhalation and exhalation) and the acute sensory and physiological responses to smoking, depending on their dieting or non-dieting status. Those who were self-reported dieters were more likely to report that: they started smoking to control their weight, they would be concerned about weight gain upon quitting smoking and they were continuing to smoke (an average of 10-12 cigarettes per day) to control their weight. The 2006 Scottish SALSUS survey found that 13 and 15 year old female regular smokers were more likely to be on a diet than non-smokers (26% vs. 19%) and that this difference was greater among 13 year olds (30% vs. 18%) (Maxwell et al 2007). Regular smokers, both male and female, were also less likely to report eating breakfast everyday (30% vs. 60%).

Kaczynski and colleagues' (2008) systematic review of empirical studies reporting a relationship between smoking and physical activity in young people under 18 years (and adults, 18 years and over) includes English language articles published up to June 2005. The negative relationship between smoking and physical activity appears less pronounced in adolescents than in the adults and the evidence appears to be mixed. Half (eight out of 17) of the studies with adolescent samples found a predominantly negative relationship, while the other half (nine out of 17) reported positive, mixed or non-significant associations between these two variables. Seven of these studies with adolescent samples disaggregated the results by gender (although one study's gender results were confounded by additional racial categories) – two of which found differences between the genders. In both studies, males were more likely than females to have a non-significant (rather than a negative) relationship between smoking and physical activity. No association was observed between adolescents' physical activity levels and the timing of smoking adoption. The authors note that the



physical activity variables employed in different studies varied greatly (e.g. frequency, intensity or duration), as did measures of smoking (Kaczynski et al 2008). A recently published qualitative study in England with 16-24 year olds at school or university identified that an interest in sport was seen as a legitimate excuse amongst smoking peers for resisting smoking due to its impact on physical performance, particularly for males (Fry et al 2008).

A meta-analysis of 43 English language studies published between 1977 and 1999 containing sufficient information on the magnitude of correlations between problem behaviours in 12 to 25 year olds included cigarette smoking, alcohol and illicit drug use, delinquency and sexual behaviours in the analysis (Guilamo-Ramos et al 2005). The analysis found a lower correlation (0.16) between problem behaviours for 18 to 25 year olds than for 15 to 17 year olds (0.41) and 12 to 14 year olds (0.37). Minimal gender differences were reported from the analysis of the 19 studies that examined the genders separately. No evidence was found for meaningful differences in between category correlations for pairs of behaviours. The mean correlation for behaviours across categories was not strong (0.35, SD=0.28). The authors thus suggest that around two-thirds of the difference in problem behaviours is on account of unique instead of common causes.

#### **4.2.13 Personal Resources (Money)**

##### UK Studies

A study using the 1998 HBSC survey data from seven European countries, including Scotland and Wales, found that 15 year olds with a weekly income above average were more likely to be smokers in all study countries, excluding Denmark. Analysis of the study data showed that adolescents from lone-parent families and step-parent families were as likely to have higher than average levels of disposable income as adolescents from intact two-parent families, even though the lone-parent and step-parent families were less affluent than the intact ones (Griesbach et al 2003). A longitudinal study with 11 year olds in the West of Scotland investigated the relationship between their personal income and parents' social class with their smoking behaviour when followed up at ages 13 and 15 years (West et al 2007). The effect of personal income on smoking was strongest among young people of higher socio-economic status and was weak or non-existent among young people with lower socio-economic status, despite the proportion of their weekly income that they spent on tobacco being greater for the latter group. The authors suggest that lower SES youths had greater access to social and illegal sources of cigarettes (West et al 2007).

#### **4.2.14 Summary**

From the review and individual study level evidence a range of factors operating at the individual level were identified which were associated with smoking uptake. Most of the studies related to early adolescence, though some including age, socio-economic status and ethnicity have been found to be associated with smoking in the 16-25 years age group. This literature confirms both the importance of the socio-demographic factors identified in Section 3 and how for some young people smoking uptake continues into the mid-twenties. It also provides a deeper understanding of how some of these factors might influence smoking uptake, as well as identifying a range of other factors that have been found to be important. Several of these relate to young people's aspirations, experiences, life-styles and beliefs about themselves and the potential costs and benefits of smoking, not only to their health but their social image and identity. For example, young people who have positive beliefs about what smoking will do for their self-image are more likely to start and continue to smoke, particularly as many young smokers do not think they are addicted to smoking, though studies show that addiction occurs at low levels of consumption. There was also evidence from UK and other studies that it is not only the individual factors that are important but the way that they interact with each other, such as gender, SES/disadvantage, ethnicity and age, and this may produce different effects in different groups. Adolescent smoking 'trajectories' are therefore interlinked with social, economic and educational transitions and trajectories.

### **4.3 Social and Community Factors**

#### **4.3.1 Parents**

##### Reviews

A review of studies published between 1980 and 2000 assessing the influence of parent or sibling smoking on adolescent smoking included 87 English language studies, 42 of which assessed parents' smoking and 43 parents' and siblings' smoking (Avenevoli & Merikangas 2003). From the inconsistencies in findings across all the studies assessing the influence of parents' smoking on adolescents, the authors concluded that parental influence may be relatively modest, and preliminary evidence suggests the effect is limited to adolescents of European and Asian descent. The evidence for a dose-response relationship is inconsistent; adolescents are not at greater risk for smoking when both parents smoke compared with just one parent smoking. However, two studies showed a trend for maternal smoking influencing adolescent smoking more than paternal smoking and five studies reported a gender-specific effect of daughters' smoking being influenced by their mothers' smoking (Avenevoli & Merikangas 2003). The authors highlight the fact that parents' role in adolescent smoking should not be ruled out on this evidence alone as the inconsistent findings

could potentially be explained by measurement issues (including parental influence attenuating across adolescence), moderators and other mechanisms in the many included studies.

### UK Studies

A recent study investigated the role of parents', particularly step-parents', smoking in adolescents' smoking behaviours as part of the HABITS (Health and Behaviour in Teenagers Study) which followed a cohort of 11 to 12 year olds in South London for five years (Fidler et al 2008b). Participants self-reported their smoking status which was verified using saliva samples, and responded each year on whether their mother, father or either step-parent, if applicable, smoked. Study data showed that smoking by parental figures (biological or not) was associated with a higher incidence of smoking in adolescents and suggests that smoking by step-parents is at least as influential as smoking by biological parents. Analysis of parental influence on adolescent smoking by the parent's gender over the whole sample showed that maternal smoking had a greater influence on both sons and daughters (Fidler et al 2008b).

The secondary school phase (with 12-16 year olds) of the Liverpool Longitudinal Study on Smoking also supports the association between parental and adolescent smoking status (Woods et al 2008). Ninety-nine per cent of adolescent regular smokers in the study sample lived with at least one smoker in the house.

An analysis of HBSC data of smoking and family structure among 15 year olds in seven countries in Europe, including Scotland and Wales, found that smoking was significantly lower among those from intact families and significantly higher in those from stepfamilies even when other factors were taken into account (Griesbach et al 2003).

A secondary analysis of data drawn from the 1958 National Child Development Study which used a nationally representative cohort of the British population born between the 3<sup>rd</sup> and 9<sup>th</sup> March 1958, followed from birth to adulthood at varying ages up to 1991 (age 33 years) found that maternal smoking status during late pregnancy (after the fourth month) was associated with an increased likelihood of the child being a non-smoker at the 16, 23 and 33 year follow-ups with men showing an increased likelihood of being a non-smoker (Munafò et al 2006). No association was found between maternal smoking status during late pregnancy and the children who reported smoking at least weekly or daily. This analysis also confirmed that either parent smoking when their offspring was aged 16 years was associated with a lower likelihood of the offspring being a non-smoker and, among smokers, higher daily cigarette consumption

### 4.3.2 Parenting Style

#### Reviews

Mayhew and colleagues (2000) found in their review that adolescent perceptions of parental permissive attitudes toward smoking and parental approval of smoking were found to be related to an increase in smoking frequency, and to trying, experimenting and regular smoking.

#### UK Studies

The secondary school phase (with 12-16 year olds) of the Liverpool Longitudinal Study on Smoking demonstrated a link between smoking trial and uptake and whether people were allowed to smoke at home: pupils who lived in a house where smoking was advocated (measured by parental behaviour and rules) were 44% more likely to try smoking (Woods et al 2008). The 2006 Scottish SALSUS survey found that 13 and 15 year old non-smokers were more likely to report that their family had a negative attitude to smoking than regular smokers (92% vs. 72%) (Maxwell et al 2007). It also found that both 13 and 15 year olds perceptions of their parents' knowledge about what they did in other aspects of their lives was inversely related to their smoking status.

The HBSC 2002 survey cohort from England found that young people in school years 9 and 11 were more likely to smoke if they did not feel support from their parents (particularly mothers) for talking about things that bothered them, whether their parents understood their problems or if their parents helped when they needed it (Morgan et al 2006; see also Section 2.1 for further information on the survey). Little sense of belonging to their family also increased the likelihood of years 9 and 11 students smoking cigarettes compared with those with a high sense of belonging as did a series of shared activities with their families (29% vs. 10%) (Morgan et al 2006).

### 4.3.3 Other Family Members

#### Reviews

The review of studies assessing the influence of parent or sibling smoking on adolescent smoking published between 1980 and 2000 included 87 English language studies, 43 of which assessed influence of parents' and siblings' smoking and two assessed siblings' smoking only (Avenevoli & Merikangas 2003). The findings for the effects of siblings smoking are more consistent than those for the influence of parents' smoking on adolescents' smoking behaviour. Most of the studies

reviewed report that sibling smoking is predictive of adolescent current and lifetime smoking; and older sibling smoking was predictive consistently across the studies. One study suggested greater concordance between sisters, however most studies did not assess genders specifically (Avenevoli & Merikangas 2003).

### Studies

A large study reporting on the European School Survey on Alcohol and Other Drugs (ESPAD) with national probability samples of 16 year olds from the UK, Slovenia, Romania, Greece, Croatia and Bulgaria reviewed data from self-administered classroom questionnaires to assess for a common pattern of factors across the countries despite their different sociocultural backgrounds. Across the countries, older siblings' smoking was strongly associated with adolescent respondent's smoking, but not to the same extent of influence as peers' smoking (Kokkevi et al 2007).

## **4.3.4 Friends and Peer Groups**

### Reviews

Walsh & Tzelepis (2007) systematically reviewed the qualitative evidence published in English up to 2002 on adolescents and tobacco use. Sixty-two per cent of the included studies ( $n=48$ ) covered peer influences on adolescents and tobacco use thus were analysed separately by narrative review, including 18 studies conducted in the UK (Walsh & Tzelepis 2007). The influence of an adolescent's peers on smoking initiation and maintenance was investigated in a number of studies. Seven qualitative studies found that peers encourage smoking initiation among adolescents. Nineteen of the studies found that adolescents primarily experience smoking as a social and group activity carried out with their smoking peers. A subsection of these studies concluded that smoking provides a common activity for bonding and breaking into new social situations. Other peer influences on initiation and maintenance include: adolescents' need for peer acceptance or to 'fit in'; the influence of group norms on smokers and non-smokers; peer group structures and hierarchies; and movement between friendship groups (Walsh & Tzelepis 2007).

In the reviewed qualitative studies the process of peer influence was framed as peer pressure i.e. coercive pressure by bullying, teasing or threats (Walsh & Tzelepis 2007). Seventeen studies mentioned the notion that adolescent smokers directly coerced their non-smoking peers into smoking, although actual incidents were rarely reported in the studies. Eighteen studies emphasised the opposite view from adolescents; any offers of cigarettes could be rejected by peers and individuals had a choice about smoking. Other processes of peer influence mentioned in the

qualitative data included: exposure to friends' smoking motivated adolescents to try it and the perception that everyone else was smoking tobacco. When comparing the relationship between this qualitative evidence and that from the quantitative literature, the qualitative literature finds that adolescents choose to join peer groups aware that it may impact their own smoking behaviour and this supports the quantitative evidence that the influence of selection processes are important factors in adolescent smoking (Walsh & Tzelepis 2007). The qualitative findings also support the evidence that, in general, peers influence other adolescents to smoke in an indirect or subtle manner – although direct pressure is reported by some.

Finally, peer influence on cessation was a theme Walsh & Tzelepis (2007) identified by a number of studies in their narrative review. Adolescent smokers recognised that a social network of smoking friends made stopping difficult. Some studies found adolescents thought friends' and families' emotional support was important for quitting, and others that peers infrequently encouraged smokers to quit. In all the included studies, there were two instances described of friends successfully supporting each other's quit attempts (one in a UK study, the other from the USA). According to the review's authors, this suggests that peer-led cessation programmes may be beneficial (Walsh & Tzelepis 2007).

#### UK and Non-UK Studies

In the qualitative study by Amos and Bostock (2007, published since Walsh and Tzelepis 2007), peers was a major theme when the mid-teens respondents recounted experiences of starting to smoke and relapses. Failure to quit was often seen as inevitable if most of their friends continued to smoke.

The European Smoking Prevention Framework Approach study (in Denmark, Finland, The Netherlands, Portugal, Spain and the UK) with 13-14 year olds, using cross-sectional regression analyses to evaluate the correlations between friends' and parental smoking status, found that in the UK (and across all the countries), the adolescents' smoking behaviour was most strongly associated with that of friends ( $\beta=0.39$ ) and that of their best friend, compared to parental smoking (De Vries et al 2003). However, longitudinal analysis 12 months later found no support for peer smoking as an important predictor of smoking onset in the UK, Finish, Danish and Dutch samples (De Vries et al 2006). Instead, support was found for the selection paradigm, implying that adolescents chose friends with similar smoking behaviour. Support for the impact of parents on adolescent behaviour and the choice of friends was also found (De Vries et al 2006). The later ESPAD study (described above, Section 4.3.3) researching samples of 16 year olds from the UK and Eastern Europe found,

across the countries, that peers' smoking was very strongly associated with adolescent respondent's smoking (Kokkevi et al 2007).

A qualitative study published since Walsh and Tzelepis's (2007) review exploring why young people believe young people smoke also concluded that smoking provides a common bonding activity and allows young people to break into new social situations (Fry et al 2008). The research with 16-24 year old school and university students (smokers and non-smokers) in Yorkshire, England found that cigarettes were perceived as a 'social tool', particularly in transitional periods e.g. starting a new job, making new friends at university (as found in Wiltshire and colleagues' (2005) study in Scotland).

For a younger age group, the secondary school phase (with 12-16 year olds) of the Liverpool Longitudinal Study on Smoking found that in all years of the study period (2002-2006), friends were overwhelmingly the source of their first cigarette (Woods et al 2008). The researchers' exploration of the peer group's role found that respondents believed that they smoked in order to portray an image to peers but it was ultimately their personal decision to choose to smoke (Woods et al 2008). A young person's autonomy over the choice of whether to smoke or not was also found in qualitative research with young teenagers (13-14 years) from economically deprived areas throughout Northern Ireland (Stewart-Knox et al 2005); but social identity within the peer group and conforming to social norms was an important influence on smoking uptake, to avoid being 'left out' or different, thus the friends had a *group* identity also.

As part of the HABITS study (Health and Behaviour in Teenagers Study) following a cohort of 11 to 12 year olds in South London for five years, Fidler and colleagues (2006b) examined the relationship between dating in early adolescence and smoking trends. The authors found strong evidence that dating at a young age (11-12 years) significantly predicted later smoking up to 5 years later, controlling for other smoking correlates such as puberty and peer smoking. The effect was significant for both genders but stronger for girls. Data on the smoking status of the boyfriends or girlfriends could not be collected but the authors could assume that later smoking was mediated by the smoking behaviour of dating partners as daters were more likely to be smokers (Fidler et al 2006b).

#### **4.3.5 School**

## Reviews

A review in 2004 looked at the relevant observational studies (in any language published up to mid-2001) to examine whether individual school characteristics, such as health promotion programmes and pupil composition, were responsible for differences in school smoking prevalence levels; as some schools not running specific interventions appeared to inhibit smoking whilst other very similar schools appeared to promote smoking (Aveyard et al 2004). Bans and enforcement were found to deter pupil smoking but there was little evidence for the impact of other tobacco control methods. Academic practice, such as amount of homework and communication between pupils and teachers, and school ethos, such as a sense of community or pupil attachment to the school, were related to smoking prevalence; however academically selective schools did not influence smoking. Only one study, from Wales, found a dose-response relationship between smoking prevalence and the degree to which schools' written policies banned smoking. Overall, the authors found that under- and over-control of confounding variables and little use of theoretical frameworks in the study papers prevented definitive conclusions (Aveyard et al 2004).

## UK Studies

Aveyard and colleagues' review informed a recent study by Henderson et al (2008) on between school differences and differences in school smoking rates in 24 secondary schools in the Tayside and Lothian regions of Scotland. Controlling for individual socio-economic and socio-cultural factors, there was a large school effect for 15-16 year old male pupils' smoking rates and a smaller (but correlated) school effect for females' smoking rates. The quality of teacher-pupil relationships, pupils' attitude to the school and school focus on caring and inclusiveness were significantly associated with pupils' smoking rates. For the earlier secondary school age groups, the risk to children of incident smoking upon entering secondary education (aged 11 years) was shown in a Nottinghamshire study to be more likely for children who join a new secondary school tutor group with a high prevalence of ever smoking (Molyneux et al 2002).

Turner et al's (2006) examination of data from a survey and qualitative discussion groups with 13 and 15 year old pupils in Scotland found that in the school with higher smoking rates: pupils were in groups more often, smokers were identified by their peers as popular, and attitudes were more pro-smoking (especially among non-smoking females). In the comparison school which had lower smoking rates, there were no popular smokers and attitudes were much less pro-smoking, again in particular, the non-smoking females' attitudes. The authors suggest that peer group structures and related influences might be part of the explanation for between school differences in smoking prevalence (Turner et al 2006). The two schools were both in relatively disadvantaged communities,



but had contrasting systems and philosophies in addition to their different smoking rates: the school with the lower smoking rates had moderate educational expectations of pupils, which conflicts with recommendations in education policies, the school with the higher smoking rate had a concentrated focus on educational outcomes, thus had little space for a health agenda and overlooked some pupils. Thus the schools' impact on pupils' engagement could explain the between schools differences in smoking rates (Gordon & Turner 2003a).

#### **4.3.6 Neighbourhood and Community**

##### UK Studies

Social environment data about young people and their local community in England from the HBSC 2002 survey cohort found that one in four young people in school years 7, 9 and 11 who had a low sense of 'neighbourhood belonging' smoked compared with 14% of those with a high sense of neighbourhood belonging. In other words, whether they trusted people living around them and whether they could ask neighbours for help (Morgan et al 2006; see also Section 2.1 for further information on the survey). The likelihood of being a smoker increased for young people with no involvement in their neighbourhood clubs/organisations compared with medium/high involvement (22% vs. 13%), and increased for young people who rarely or never felt safe in their community in comparison to those who always felt safe (27% vs. 15%) (Morgan et al 2006).

Section 4.2.2 described the UK evidence on the relationship between measures of socio-economic status, including multiple deprivation, and smoking in adolescence. This may be also related to and/or mediated through parental and family influences. It is also possible that wider community smoking norms, attitudes and behaviours may also have an influence (see Section 4.4.7). Not only is smoking more prevalent in more disadvantaged communities but, prior to the UK smokefree legislation, bars, pubs and other workplaces (including leisure venues) in areas of socio-economic disadvantage were less likely to have smoking policies and more likely to permit smoking than in affluent communities (Torque et al 2005, Plunkett et al 2000, Woodall et al 2005). Thus young people would be more likely to be exposed not to adult smoking in more disadvantaged communities. However, no study was found which analysed the relationship between community norms and youth smoking.

### 4.3.8 Summary

The review and individual study level evidence confirms the findings in Section 3 of the importance of parents' smoking behaviour and attitudes on influencing smoking uptake. It also shows that other parental factors, notably parenting style, as also important as well as the influence of other family members' particularly siblings. Section 3 described the association between whether a young person's friends smoked on whether they were also a smoker. The evidence in this section reinforces the importance of friends' smoking status and peer group influence and builds on the evidence in Section 4.2 to show how this relates to self and peer group image and identity. Many young people perceive smoking as having the important social functions of helping them to fit in and bond with their friends, and smooth their transition into new social and occupational settings. Wider social attitudes and relationships also appear influential. School policies on smoking as well as the whole school ethos and quality of relationships between staff and pupils, have been associated with pupils' smoking prevalence. There is also some UK evidence that young people were more likely to be smokers if they had a low sense of neighbourhood belonging, which is an indicator of social capital.

## 4.4 Societal Factors

### 4.4.1 Access

#### Reviews

A systematic review of English language qualitative evidence published up to 2002 on adolescents and tobacco use included 19 studies in its narrative analysis of access to tobacco or tobacco sales issues (Walsh & Tzelepis 2007). Only one qualitative study focussed exclusively on the issue; two focussed on the family-related aspects of access; and one on access to cigars only. Overall, the narrative analysis found that access was not perceived by young smokers to be difficult – only three studies reported any data contradicting this to any significant extent. Even in high enforcement localities, there was perceived to be a 'multiplicity of sources and strategies' used by adolescents for obtaining cigarettes. Eleven of the included qualitative studies examined the role of parents and family. In all of these relatives were identified by adolescent respondents as important sources of cigarettes, including the only two UK studies in the narrative review (one a Scottish study and one conducted in London). This qualitative evidence supports the national survey findings which also find a multiplicity of sources of cigarettes used by young people in England (see Section 3.7). The authors concluded that it was unclear how generalisable the findings from the qualitative evidence

was to elsewhere as only three of the studies were undertaken outside North America (Walsh & Tzelepis 2007). The qualitative synthesis highlighted the flexible and variable strategies that adolescents adopt to obtain cigarettes in different periods of adolescence and in different situations, particularly the importance of social exchange in cigarette access. This supports the quantitative findings that youth access programmes are unlikely to be effective (e.g. see Stead & Lancaster 2005, Section 5.2.2). The authors argue that if greater attention had been paid to the qualitative research, more realistic and limited expectations of the effectiveness of reduced access to minors programmes would have been realised sooner (Walsh & Tzelepis 2007).

Ogilvie and colleagues (2005) reviewed young peoples' access to tobacco (and alcohol and other drugs) in the UK using population surveys and evidence reviews. They reported that tobacco was widely available to young people (the law changed from 16 to 18 years and over in England on October 1<sup>st</sup>, 2007) in the UK, and that the price of cigarettes was high by international standards, although tobacco can be imported for personal use. In addition, young people could easily obtain cigarettes from a range of social and illicit commercial sources before they reached the legal minimum age for such purchases. The reviewers concluded that increasing the price of tobacco was likely to reduce young people's demand and enforcing the minimum age for purchase of tobacco could reduce sales to people under the legal age limit, but unenforced voluntary agreements with retailers had not been shown to influence young people's tobacco use (Ogilvie et al 2005).

#### UK and Non-UK Studies

In the UK tobacco is available to purchase (often at any time of day or night) from newsagents and confectioners, grocers shops, supermarkets, off-licences, petrol forecourts, tobacconists as well as from bars, entertainment venues and vending machines. However, no studies were identified in the searches from the UK of the effect on young people of the geographical density of tobacco retailers. A study in California (Henriksen et al 2008) found that the prevalence of current smoking in high schools was higher in schools in neighbourhoods with more than five tobacco outlets than schools in neighbourhoods without any tobacco outlets. A study in Canada (Leatherdale & Strath 2007) of secondary school pupils found that tobacco retailer density around secondary schools was related to young people's cigarette access behaviour. However more research is required to determine whether the associations are causal and, if so, in what direction (Cohen & Anglin 2009).

In terms of access to first cigarette smoked, the Liverpool Longitudinal Study on Smoking secondary school phase (12-16year olds) found that around a fifth obtained their first cigarettes by stealing from a parent or other family member, but this decreased with age (Woods et al 2008). As

the group got older a number were either given their first cigarette by another family member or bought them from a shop themselves.

A study in the West of Scotland involving a survey and qualitative research found that 13 and 15 year old pupils attending a secondary school in a deprived catchment area that had high smoking rates perceived greater access to commercial and social sources of cigarettes than pupils at a low smoking school in a similarly deprived socioeconomic area, possibly increasing the supply and demand of cigarettes, or the 'active peer market' (Turner et al 2004).

#### **4.4.2 Price, Tax and Illicit Tobacco**

##### Reviews

A systematic review of the effects of price on the cigarette smoking behaviour of young people aged 25 years and under was conducted by narrative synthesis of relevant empirical studies in any language with a focus on reported price elasticities published up to June 2007 (Godfrey et al 2009). Forty-five studies met the inclusion criteria; one from each of Australia, Sweden and the UK with the rest conducted in North America. The review found that for smoking participants, in terms of key sociodemographic variables, evidence that males are more responsive to price differences; there were no age differences; and, from two studies, black ethnic groups were more responsive to price differences than white. There was limited evidence that price affected smoking prevalence (three studies) but a study rated as the strongest methodologically, found a modest response for price affecting cigarette smoking prevalence for school-age children. There was consistent evidence for level of smoking, measured by the quantity of cigarettes smoked by smokers, that older young people showed a greater response to price than younger; there was a greater impact of price on males and for white ethnic groups. When level of smoking was measured by the total quantity of cigarettes smoked, again the effect was greater for older young people and for males, with conflicting evidence for ethnicity (Godfrey et al 2009). Evidence was lacking on the impact by socio-economic status.

##### UK and Non-UK Studies

An econometric USA study published in October 2007 used National Youth Risk Behaviours surveys data from 1995-2001 to establish that higher cigarette taxes and prices reduced the prevalence and frequency of smoking in teenagers; and that cigarette acquisition patterns were significantly influenced by higher taxes and prices (Katzman et al 2007). This led to a significant

reduction in smoking amongst those buying cigarettes but had less impact on those borrowing cigarettes or obtaining them from a social source. An earlier simulation study on experimental price increases found that three-fifths of future smokers (i.e. those who intended to smoke after a price change) indicated that they would be less likely to offer their cigarettes to friends if the pack prices had increased (Ross et al 2005). In England, over a third of teenagers reported buying cigarettes from a social market and nearly double that figure reported being given cigarettes by other people (see Section 3.7).

As detailed in Section 3.7, three in ten 16-24 year old smokers reported that they buy illicit cigarettes, however no reviews or studies were found in the literature searches on the effect of the availability of illicit or smuggled tobacco on whether young people start and continue to smoke. It is estimated by the Government that between 8 and 18% of the UK tobacco market is illicit tobacco and one in six cigarettes smoked in the UK is counterfeit or smuggled (Department of Health 2008).

#### **4.4.3 Mass Media**

##### Reviews

As part of their most recent tobacco control monograph on the role of mass media, the US National Cancer Institute (NCI) conducted a comprehensive international review of the published evidence on the entertainment media's role in promoting tobacco use through portrayals in films, television, music, magazine and the internet, and its subsequent influence on youth smoking behaviour and attitudes (Davis et al 2008). (They also reviewed the evidence on the effectiveness of mass media campaigns and this is considered in Section 5.5.5.) The review finds that for adolescents (study samples ages range from 10-19 years old) there is evidence from cross-sectional studies that exposure to smoking in films (assessed by content analysis of, for example, tobacco occurrences or number of times cigarettes appear on screen or the smoking status of a favourite film star) is associated with smoking initiation (controlling for peer and family smoking) and that among adolescent never smokers, exposure to smoking in films is associated with more positive attitudes to smoking. Evidence from two longitudinal studies from the US with young people aged between 10 and 17 years (at the studies' inceptions), showed that those with higher exposure to smoking in movies at baseline were twice as likely to try cigarette smoking in the future. Findings from the experimental studies reviewed (with samples from seventh graders to college students to adults) included: that adolescent viewers' beliefs about the function and consequences of smoking, beliefs about social norms for smoking and personal intention to smoke, are all influenced by images of

cigarette smoking in films. Film content such as popular actors smoking or a lack of the portrayal of health consequences from smoking, that is 'pro-tobacco' or 'pro-smoking' film content, appears to promote favourable smoking beliefs and intentions.

In the analysis, the NCI review authors do not break it down by demographic variables (Davies et al 2008). However, they note that two cross-sectional studies examining the smoking status of favourite film stars on adolescent smoking separated the effect by the actor's and the adolescent's gender; one study found a significant association in girls for male actors smoking and the second found no associations. One longitudinal study found that female adolescents (but not males) who chose film stars who smoked as their favourite stars were significantly more likely to initiate smoking during the follow-up period. An experimental study with college students showed either smoking or non-smoking film clips, found regular or occasional male smokers had a higher current desire to smoke if in the smoking film clip group.

The cross-sectional and longitudinal studies discussed above all had adolescent samples (aged 10-19 years). Two experimental studies had older samples (college students, age range undefined). One found that college students who viewed scenes from films where the main character smoked were more likely to indicate a likeliness to smoke in various situations than those who viewed non-smoking film scenes; the effect persisted when smoking status was controlled. The second experimental study did not find such an effect on smoking intention and had a smaller study sample of college students.

The majority of the research on young people and smoking in films has been conducted in the USA but films from the USA are widely viewed in the UK. According to the UK Film Council, 17 of the top 20 films released in the UK in 2007 wholly or partly originated from the USA (UK Film Council 2008). Seven to 24 year olds made up 49% of the cinema audiences for these films in 2007 (figure excludes DVD rental/sales, TV films and films downloaded from the internet). However, the only study identified in the literature searches, which was conducted with young people in the UK, found no association between the estimated number of occurrences of smoking seen in films and current or ever smoking at 19 years (Hunt et al 2009). The study used cross-sectional analyses of data collected from 19 year olds in Scotland from a longitudinal cohort previously surveyed at 11 years. It is difficult to determine whether the UK's discrepancy is due to age differences, cultural differences (including smoking prevalence) or methodological considerations.

For television viewing, the NCI review (Davis et al 2008) finds that the studies reviewed suggest a possibility that television viewing could be linked with smoking uptake and continuing with smoking, but a social-influences link between exposure to smoking on television and smoking initiation was not found when other social influences were controlled for (e.g. smoking in movies, peer and family smoking).

Although content analyses demonstrate that pro-smoking imagery is very extensive on the internet (Davis et al 2008, Dewhirst 2008), no studies were identified in the NCI review or the literature searches which examined the effect of the internet on young people's smoking behaviour.

The NCI review reports on content analyses of pro-smoking material in adult magazines, and one is a content analysis published in 1999 of the most popular British young men and young women's style magazines which found major differences between the two sets in the advertising editorial pages, health coverage, editorial images of celebrities smoking and stages fashion shots (Davis et al 2008). The review finds few studies exploring how young people engage with the images of smoking in magazines or their effects, but describes two from the UK. The first found that the presence of a cigarette in otherwise identical magazine pictures from youth and style magazines meant that young people rated the images as more 'druggy', wild or depressed and the cigarette-free images as healthy, rich, nice and attractive. Although some of the cigarette pictures contained attributes the young people aspired to, smokers (especially males) identified more strongly with the cigarette pictures than the non-smokers did. The second, a qualitative study with university students who were all smokers, found that the smoking images in youth style magazine were perceived to be attractive, social and reassuring and the respondents associated the 'personality' of the magazines (e.g. carefree hedonism, risky behaviour and anti-political correctness) with their own self-images (Davis et al 2008). It should be noted that much of this UK research took place before the tobacco advertising ban.

### Non-UK Studies

The most recent evidence located in the literature searches from a country where advertising has been banned is a study from Australia with 14-17 year old smokers and non-smokers. Forty-two per cent of those who viewed a mock-up of a youth magazine containing smoking images before being interviewed made unprompted mention of the smoking imagery compared to those who saw a the same magazine but which did not include the smoking images (Carter et al 2007). In addition, the

imagery in the smoking magazine increased female non-smokers' intention to possibly take up smoking.

#### **4.4.4 Tobacco Promotion and Marketing- Point of Sale**

##### UK and Non-UK Studies

In a 1994 USA classroom survey, conducted several years before the increase in point of sale (PoS) marketing in that country, researchers found an association between 13 year olds' exposure to cigarette adverts in stores and being a tobacco "experimenter". Sixty-two per cent of the young people reported going into stores and seeing tobacco adverts "sometimes" or "a lot"; those who reported seeing PoS advertising were 38% more likely to have experimented with smoking (Schooler et al 1996). Another classroom survey conducted with Californian teenagers at middle school in 2003 examined exposure to tobacco marketing in convenience, liquor or small grocery stores and its association with self-reported smoking (Henriksen et al 2004). The study found that students reporting one or more weekly exposures to retail tobacco marketing was associated with a 50% increase in the odds of ever smoking, having controlled for all other variables in the model. The study controlled for social influence and risk factor confounders (i.e. self-reported school grades, risk taking and maternal supervision). They concluded that the association between store visits and smoking behaviour "*appears more likely an effect of advertising exposure than an artefact of ...hanging out with the wrong crowd*".

Similar findings arose from research with 3,890 high school smokers across the USA in 1996. In the case of one brand (Marlboro) the amount of PoS advertising in local convenience stores was found to predict youth brand choice: the more PoS advertising there was for Marlboro, the more likely they were to smoke it. The findings were similar for a rival brand (Camel), so far as interior store advertising was concerned, but otherwise inconclusive (Wakefield et al 2002). A large USA study with 26,301 14, 16 and 18 year olds was the first designed to examine the differential effects of cigarette retail marketing strategies on youth smoking uptake (from experimentation to established smoking) at a national level (Slater et al 2007a). The study found that higher levels of PoS advertising, lower cigarette prices and greater availability of promotions (e.g. discounts, gifts) increased the likelihood of smoking at most levels of uptake. The results suggested that PoS advertising was associated with encouraging young people to try smoking, whereas promotions at PoS were associated with influencing those already experimenting to progress to regular smoking, with established smokers being the most influenced by promotional offers (Slater et al 2007a).



Research outside the USA has found the same set of relationships between young peoples' brand awareness, under-age smoking and exposure to PoS tobacco marketing. For example, in a study investigating the effect of tobacco sports sponsorship on the levels of brand awareness amongst 14 year-olds in New Zealand, found that, even allowing for the effects of sponsorship, sports interest and gender, the brands with the highest unaided recall levels were those that were prominently shown in PoS displays in stores frequented by the young people (Sparks 1999). In an experimental study conducted in classrooms in Victoria, Australia in 2003/4, 14 and 15 year old students were shown one of three digitally manipulated photographs of a convenience stores' PoS area with either no cigarettes or a cigarette pack display, or cigarette advertising and a pack display (Wakefield et al 2006). The study found that the presence of cigarettes at PoS increased students' perceptions about ease of purchasing cigarettes and decreased the perceived likelihood of being asked for proof of age from the hypothetical store. The pack displays promoted brand recall and weakened student's intentions not to smoke. This study also confirmed the findings of Henriksen and colleagues' USA study (2004), that the frequency of young people's visits to convenience stores was associated with a higher likelihood of experimenting with cigarettes.

There is evidence that these findings also apply in the UK. MacFadyen et al (2001) recorded universal awareness of PoS among 15 and 16 year olds in North East England and went on to examine the impact this might have on future smoking behaviour. A more sensitive measure of PoS awareness was constructed by summing the number of brands which they could recall seeing in this medium. Subsequent logistical regression analysis showed a clear relationship between greater awareness of PoS marketing and future intention to smoke. Other variables, such as friends' and parents' smoking, social class and age were also implicated, but after allowing for all these other factors, the odds of a child professing an intention to smoke increased by 35% with every brand that respondents could name as having seen at PoS (MacFadyen et al 2001, Hastings 2003).

#### **4.4.5 Tobacco Promotion and Marketing- Packaging**

##### UK and Non-UK Studies

Tobacco packaging is the marketing tool with the most direct links to the consumer, with cigarettes being a 'badge product', conspicuously consumed while making public statements about the smoker's image and identity (Hastings et al 2008a; Fry et al 2008). Following the restrictions on

tobacco advertising and promotion in the UK, the pack has become the main promotional platform for the tobacco industry to recruit and retain customers (Hastings et al 2008a).

The young are particularly susceptible to these effects. Large-scale research in the UK with 11-16 year olds has demonstrated that even after advertising is banned, branding continues to drive smoking (Moodie et al 2008) and that young people's awareness of the packaging and new pack design of the four most popular brands with this age group is a key element of this ongoing marketing (CTCR 2008).

A recent UK study with young smokers and non-smokers aged 11-17 years ( $n=806$ ) and an adult sample of smokers ( $n=516$ ), asked participants to assess pairs of cigarette packs on a variety of qualities including health risk, attractiveness, whether they would try smoking (young people only) and whether they would be easy to quit smoking (adults only) (ASH, CRUK, BHF 2008). The researchers found that the branding of the packs (printing on the words 'smooth' and 'gold' as well as using lighter colours in the pack design) greatly affected the young and adult consumers' perceptions of the attractiveness and relative safety of the cigarettes. A key finding was when participants were asked to compare pairs of plain (or generic) cigarette packs they found the brands less attractive and (correctly) indicated no differences between the health risks of the brands. This suggests that generic packaging would have an immediate effect on young people's perception of the attractiveness of the cigarettes (ASH, CRUK, BHF 2008). (An academic article with more in-depth analysis is in currently preparation (McNeill & Hammond).) Research with young people in Canada also found that young consumers perceived generic packaging as less fashionable and less attractive (Centre for Health Promotion 1993).

#### **4.4.6 Tobacco Promotion and Marketing -Pack Size**

##### UK Studies

In 2006, over half (54%) of pupils aged 11-15 years surveyed in England who bought cigarettes in a shop on their last attempt, bought a pack of ten (Fuller 2007), although no evidence was found in the literature search for pack size influencing young people starting or continuing to smoke. The Scottish Prevention Working Group in Scotland (Scottish Executive 2006) also highlight in their report that there is no objective evidence to demonstrate the effectiveness of banning packets of ten to reduce young people's smoking, although many countries have banned their sale as part of broader youth prevention strategies. The WHO identified them as an industry tactic "*made for*

*children, young people and those on low income in an effort to maintain and even enlarge the market for tobacco products” (WHO 2004 as cited by Scottish Executive 2006).*

#### **4.4.7 Social attitudes and norms**

As discussed in previous sections, both the actual and perceived smoking related attitudes and norms of family members and friends are associated with smoking in young adolescents. Socio-economic status and ethnicity are also related to youth smoking. It has therefore been argued that wider community, societal and cultural attitudes and norms would also be likely to be influential. Thus growing up in

##### Reviews

No recent reviews were found on the influence of wider social attitudes and norms on youth smoking.

##### UK and Non-UK studies

A recent study used data from the 2001/02 HBSC study and national tobacco control policy data collected by WHO in 2003 to examine whether national policies in 27 European countries, including the UK, were related to daily smoking prevalence in 13 and 15 year olds (Schnohr et al 2008). They found no relationship between adolescents and adults smoking prevalence. However this was a cross-sectional study and therefore couldn't assess the possible influence of declining levels of adult smoking on youth prevalence.

A US longitudinal study explored the impact of banning smoking in restaurants in Massachusetts on smoking uptake in 12-17 year olds (Albers et al 2004, Siegal et al 2005). The study found that young people living in towns with strong smoking regulations were more likely to perceive lower adult smoking prevalence than those from towns with weak regulations. They also had less than half the odds of progressing to established smoking (having smoked over 100 cigarettes). This effect was greater the longer the regulations had been in place. Adult smoking prevalence did not decline, but there was a threefold increase in the odds of adult smokers attempting to quit in towns with the strong regulations (Albers et al 2007). Anti-smoking norms among adult smokers who already regarded smoking in restaurants and bars as socially unacceptable were also reinforced. The authors argued that changes in adult smoking behaviours, including reducing the number of smokers that young people see in public places, and in adult

social norms can influence youth smoking uptake by reducing the perceived social norms and social acceptability of smoking.

#### **4.4.8 Summary**

The review and individual study level evidence confirms the findings in Section 3 that young smokers use a variety of sources, both social and commercial, to access cigarettes and tobacco. The relative importance of these sources is related to the smoker's age, enforcement of sales laws, price, density of local commercial outlets and socio-economic profile of the local community. There is good review evidence that price also influences smoking consumption in young people, though this has more impact in older (who are more likely to use commercial sources) and male young smokers. There is also some evidence that price influences youth smoking prevalence. Being exposed to media images of smoking, notably in films, as well as exposure to tobacco marketing through point of sale displays, has been shown (in mostly non-UK studies) to be associated with positive smoking attitudes, smoking initiation and experimentation in young people. Packaging and point of display marketing can increase brand awareness and positive attitudes and beliefs about smoking. There is also some evidence that wider social norms, attitudes and behaviours in relation to smoking can influence the perceived acceptability of smoking among young people and thus smoking uptake.

## **4.5 Conclusions**

The national survey data presented in Section 3 showed how smoking status and consumption in young people in England is associated with a range of individual (socio-demographic, attitudinal, dependence) and social (family, friends, access) factors. The literature reviewed in this section, which includes both review level evidence and individual studies, not only extends the range and type of factors involved in smoking uptake and maintenance but provides some important insights into the way that these are experienced and their effect on young people's day-to-day lives and their social worlds. While there has been considerable research on smoking and young people there are also important gaps and limitations that need to be taken into account when drawing conclusions that are applicable to young people living in England today. These include:

- The type and nature of the studies: most were quantitative studies, though the number of qualitative studies appears to be increasing.

- Study groups: most were carried out in North America and focussed on the secondary school age group. Very few studies were found on older adolescents and none specifically on the 20-24 year old group.
- Study design: Cross-sectional studies dominated. Very few recent British longitudinal studies were found and even fewer followed up young people beyond secondary school (though neither of these was specifically focused on smoking).
- Reviews: recent reviews were found for most of the potential determinants but there were several important areas where none were found. These included gender, ethnicity and addiction/dependence. Also no recent review has attempted to assess the relative importance of different factors at different stages in adolescence and/or smoking uptake and in different groups and contexts.

Despite these limitations, several clear, as well as some more tentative, conclusions can be drawn about young people and smoking in England. Adolescence is a period of considerable change and challenge for young people as they negotiate key transitions (e.g. social, economic, occupational, biological) from childhood to adulthood. During this period young people will try out or experiment with a range of behaviours, which for around half to two-thirds will include smoking. The quantitative research literature shows that whether or not a young person starts and then continues to smoke is influenced by a complex interplay of different factors operating at the individual, family, social, community and societal levels (Figure 8). The qualitative research reveals from the young person's perspective, how these are experienced and shape both what smoking or not smoking means to them and the contexts in which they make decisions about smoking.

Young people are most at risk of starting to smoke if they:

- have grown up and live in a world where smoking is the norm or at least accepted (e.g. parents, siblings, SES, community, ethnicity, culture);
- move into social networks with similar norms and where smoking has perceived positive functional value within social relationships and contexts (e.g. friends, peers, other behaviours);
- have access to cigarettes and they are easily available (e.g. disposable income, social and commercial sources);
- believe smoking helps project the type of image they aspire to (e.g. identity, media, tobacco promotion);

- perceive that smoking may also help deal with difficult aspects of adolescence and transition (e.g. affect control, weight control, educational achievement) particularly where there may be limited alternative support (e.g. parents, school, skills);
- feel that any negative effects such as the longer term health risks are discounted or not immediately salient (e.g. knowledge, addiction);
- have disadvantaged social, educational and economic trajectories.

Dependence on smoking develops through a combination of increased exposure to nicotine (addiction), which can happen at low levels of consumption and more rapidly than young people believe, and perceived psycho-social aspects - what they think smoking does for them and the risks around stopping. While some research has explored how these factors interact or are experienced differently in relation to age, gender, SES and ethnicity, they do not fully explain the patterns and trends in smoking described in Section 3. However, the literature review indicates that whether and in what ways young people will engage with and respond to tobacco control are likely to vary according to this diverse range of personal and contextual factors.

## **5. CURRENT TOBACCO CONTROL POLICY CONTEXT AND FUTURE POLICY OPTIONS AND THEIR LIKELY EFFECTIVENESS**

This section reviews the published research evidence on smoking prevention and cessation for young people in order to assess the likely effectiveness of different types of action in the current tobacco control policy context and considers the implications for future policy options. Where available, evidence on the effectiveness and any differential impact of different policies and interventions by gender, age socio-economic status and ethnicity is presented. However, few reviews or studies presented included such analyses. Very few studies focused on interventions aimed at the 16 to 24 age group. Section 5.1 considers the evidence on the effectiveness of interventions undertaken in different settings (which address mostly individual, social and community factors), 5.2 considers policies and action aimed at addressing societal level factors, 5.3 reviews multi-component policy, community and societal level programmes and 5.4 the evidence on the effectiveness of youth cessation programmes.

### **5.1 Youth Smoking Prevention**

#### **5.1.1 Family Setting**

This section reviews research which provides evidence on the effectiveness of interventions (including policies) on smoking prevention through trying to influence factors in young people's social environment i.e. programmes involving parents, other family members or friends and peers. From national survey data, young teenagers are more likely to be smokers if both parents smoke and to smoke more openly at home (see Section 3.10) and the studies described earlier provide an insight into the influence of parents' and siblings' on young people's smoking behaviour (see Section 4.3).

#### Reviews

A Cochrane systematic review (Thomas et al 2007), which synthesised data published as recently as 2007, included 22 randomised control trials with children (5–12 years) and adolescents (13–18 years) predominantly from the USA, looked at the effectiveness of interventions which aimed to help family members reinforce their non-smoking attitudes and promote non-smoking in children and other family members. Results were mixed; some of the well-executed studies showed that family interventions might help to prevent adolescent smoking but there were mostly neutral or negative findings in the less well-conducted trials. The reviewers found that training staff implementing the programme and how well they then delivered the programme might be related to

overall effectiveness, but the number of sessions within a programme did not make a difference. The conclusions were drawn from a small group of studies limited by having only minimal or moderate bias risk compared to previous reviews. The authors concluded that given the current evidence base, they could not draw any firm conclusions about the effectiveness of family-based programmes to prevent adolescent smoking or whether their intensity could produce a persistent effect.

A systematic review conducted in England (Petrie et al 2007) looked specifically at the effectiveness of parenting programmes on preventing tobacco, alcohol or drugs misuse in children under the age of 18 years. Twenty studies on programmes (published up to October 2003) for developing parenting skills, improving communication between parent and child or enhancing the effects of other interventions (e.g. in schools) were included. Statistically significant self-reported reductions of tobacco use were found in nine out of 13 studies. The strongest evidence was based on work with pre-teen and early adolescent children. The authors concluded that interventions which included active parental involvement and emphasised social skills development and personal responsibility, could more effectively reduce or prevent substance (including tobacco) use.

A protocol is available for a Cochrane review on mentoring to prevent drug and alcohol use by 5 to 18 year olds, currently being compiled by the Canadian team who produced the family-based programme review discussed above (Thomas et al 2008a). In the current literature, mentors can be ‘natural’ or ‘formal’ and represented by an adult or a peer the young person respects.

### Non-UK Studies

Farkas and colleagues’ study (2000) found that the most effective way of reducing smoking prevalence among adolescents was for smoking parents to quit themselves, as smokefree homes nearly double the chances that children who begin to smoke will quit.

## **5.1.2 School Setting**

### Reviews

Flay has recently published two reviews of reviews (2008 and 2007) on the effectiveness of school-based smoking prevention programmes examining studies published up to December 2007. The 2008 publication comprises a systematic review of school-based prevention programmes with long-term effects. Flay concludes that school based social influences-oriented programmes may produce a long-term relative improvement of between 25% and 30%, based on the findings of 3 US



programmes. As so few studies met the review's methodological criteria, 8 further programmes with significant short-term effects were analysed and these indicated that even larger long-term effects could be reached by prevention programmes that effectively changed the general developmental smoking trajectory of youth for the positive (Flay 2008).

Flay's 2007 review focused on what long-term effects (by the age of 25 years) the USA might expect if the best school-based smoking prevention programmes were adopted nationwide, pointing out that recent findings had raised questions about the medium-term (at high school) effects of school-based programmes. Flay summarises the reviews and meta-analyses evidence base on schools smoking prevention interventions as potentially having significant long-term effects if they are interactive social skills or social influences programmes (where young people are educated about social norms and influences and provided resistance skills for them); if they involve 15 or more sessions, including some up to at least the US ninth grade (age 14-15 years); and if they produce substantial short-term effects (Flay 2007). He concluded that a number of the interventions reporting short-term effects might also have medium- and long-term effects if they were evaluated to that point, however long-term funding was rare (Flay 2007). The 2008 review regards the issue from a global perspective, adding that in adopting and adapting programmes for use in different contexts to those tested – particularly in other culture and countries – care must be taken to implement with integrity, monitoring this process as well as outcomes.

A systematic review by authors from the UK on the effects of school's institutional factors on young people's use of drugs (Fletcher et al 2008) included high quality quantitative studies published up to March 2006. Three included intervention studies reported smoking and drinking outcomes separately to drug use and all suggested the interventions had a protective effect against smoking. Only two high quality observation studies reported associations between school level exposures and young people's drug use, one being the West of Scotland study (West et al 2004), and suggested that positive ethos and overall levels of strong school relationships and engagement are associated with lower rates of drug use (including tobacco). Fletcher and colleagues conclude that improving school ethos to combat dissatisfaction should be viewed as "a promising complement to current curriculum-based intervention to prevent drug use".

Thomas and Perera's Cochrane systematic review (2006) looked at school-based programmes for preventing children who had never smoked from becoming smokers. It synthesised data published up until October 2005, including 94 randomised control trials with young people aged 5 to 18 years old, and predominantly from North America. Of these, 23 randomised controlled trials (RCTs) were

categorised as at low risk of bias and therefore of high quality. The interventions included information giving, a social influences approach, social skills training and community interventions. There was little evidence that giving information alone was effective. Most (13/23) of the studies drew on a social influences intervention (e.g. using normative education and resistance skills training to counter adolescents' overestimation of smoking prevalence, teaching and practicing refusal skills or making public commitments not to smoke). Although half of the high quality studies in this group found short-term effects on young people's smoking behaviour, the highest quality intervention which had the longest trial found no long-term effects from 65 lessons over eight years. Limited evidence was found for the effect of interventions that included developing generic social competence or for multi-method approaches such as community initiatives. Note that Flay's review of reviews discussed above, include this systematic review in the analysis.

The systematic review of school-based smoking prevention trials with long-term follow-up by Wiehe et al (2005) was also included in Flay's review of reviews. Briefly, it searched for RCTs published up until July 2003 which included a follow-up evaluation to age 18 years (or 12<sup>th</sup> grade) and at least 1 year after an intervention ended, with smoking prevalence as a primary outcome. Eight studies passed the quality criteria differing in intervention intensity, presence of booster sessions, follow-up periods, and attrition rates. Only one study showed decreased smoking prevalence in the intervention group.

A systematic review evaluating the effectiveness of using school-based drama interventions in health promotion for 6 to 18 year olds was conducted in 2006 (Joronene et al 2008). The review demonstrated that most short-term school-based drama or theatre plays were successful in increasing knowledge and positive attitudes related to health behaviour among schoolchildren. Of the nine included studies on interventions, two had smoking outcomes and found the effects of drama or plays on smoking intentions remained modest. The UK's *Theatre in Health Education* (Thrush et al 1999 as cited by Joronene et al 2008) in 24 UK primary schools had a partially positive impact on smoking behaviour at the two and a half year follow in secondary schools: there was a weak but statistically significant positive effect on smoking behaviour among girls but no effect among boys.

### UK Studies

In terms of the effectiveness of a schools prevention programmes involving peers, the prime example in the UK is ASSIST (A Stop Smoking in Schools Trial), a randomised control trial (RCT) of the effectiveness of using peer-nominated year 8 students (12-13 years old) to support their peers

by discouraging them from smoking in everyday, informal situations (Audrey et al 2004). The nominated 'peer supporters' were intensively trained in effective interventions by professional health promotion staff outside the school premises. The project was piloted in South Wales (Bloor et al 1999) before the clustered RCT was increased to 59 schools in South Wales and the Bristol area in England with 30 schools randomly assigned to continue their regular smoking education programme, and 29 schools to have the peer intervention running alongside their regular programme. The study demonstrated a sustained reduction in uptake of regular smoking in adolescents for 2 years after its delivery. In a three-tier multilevel model with data from all three follow-ups (immediate, 1 year and 2 years), the odds of being a smoker in intervention compared with control schools was 0.78 (0.64-0.96) (Campbell et al 2008). Qualitative work with both students and school staff highlighted that it was well-received and credible (Audrey et al 2006, Audrey et al 2008).

A cohort study with schools in the West Midlands measuring smoking behaviour in 13 to 14 year olds and following them up one year and two years later, examined whether schools with high exam pass rates and low truancy rates were associated with lower school smoking prevalence (Markham et al 2008). The sample included some schools serving very disadvantaged communities but which had these characteristics; appearing to suggest that some schools were breaking the link between deprivation and smoking.

A Scottish study which examined the reasons behind different smoking rates in two schools found that when asked the extent to which smoking restrictions should and could be enforced by school staff, pupils' views were that enforcement could interrupt pupils' smoking and discourage it on school grounds however they believed staff did not always have the authority or status to enforce a ban and efforts to do so were ineffective (Turner & Gordon 2004). Interviews with the staff found that where an immediate fire risk was absent, staff intervening when confronted by a pupil smoking was mainly dependent on the context or by personal or professional values, including: concern about staff-pupil relationships, attention to pupils' wider welfare, levels of personal discomfort and lack of authority (Gordon & Turner 2003b).

A drama smoking education project has been piloted more recently in nine secondary schools in the north east of England with 14-15 year olds (traditionally beyond the age group which receives tobacco-specific lessons) (MacMorran 2008). Using the same theme of tactics the tobacco industry use to recruit and retain smokers from the Florida Truth campaign (see Sly et al 2001), a local theatre company scripted a performance and workshops to raise awareness of the tactics, stimulate

discussion and highlight the support available for quitting. Follow-up smoking attitude and behaviour measures were not built in at this stage, however feedback from the audience was positive and it achieved the objective of raising awareness of tobacco industry tactics (Healthy Schools Newcastle-upon-Tyne & Gibber Theatre Company 2008).

### 5.1.3 Community Setting

#### Reviews

Müller-Riemenschneider and colleagues' (2008) systematic review broadens the recent evidence base to English and German language articles published between 2001 and 2006 and includes and compares schools-based ( $n=8$ ), community-based ( $n=7$ ) (any intervention conducted outside the school environment) and multi-sectorial (involving school and community approaches) ( $n=3$ ) behavioural interventions to prevent smoking amongst under 19 year olds. Despite the overall effectiveness of the programmes being extremely diverse, most of the studies reported some positive long-term effects. Most of the community-based interventions and multi-sectorial programmes reported strong evidence of long-term effectiveness; community interventions demonstrated reductions in smoking up to 10.6% and in the multi-sectorial programmes the difference in smoking rates between intervention and control groups always favoured the intervention group. Results were inconclusive for the schools only programmes. Flay's (2008) analysis, based on the findings of four programmes which included mass media or community components alongside a school-based prevention programme with proven effectiveness, suggests such a programme could produce a long-term relative improvement of between 35% and 40%.

An earlier Cochrane systematic review looking specifically at community smoking prevention interventions to prevent smoking in under 25 year olds was not focussed on long-term effectiveness and the resulting narrative synthesis which took methodological issues into account found limited evidence of effectiveness (Sowden & Stead 2003). In all but two of the included studies the participants were aged 19 years or under. Bruce and Teijlingen's review of the effectiveness of the Smokebusters community-based campaign of clubs and agencies for 8 to 15 year olds around the UK and Ireland, concluded that the data from evaluation studies indicated that the initiative was successful in changing knowledge and attitudes towards smoking but not smoking behaviour (Bruce & Teijlingen 1997).

#### **5.1.4 General Practice / Primary Care Setting**

##### Reviews

A US review of interventions for children and youth in the health-care setting (Halpern-Felsher 2007) found that physicians' rates of screening, educating and counselling adolescent patients were far below recommended guidelines but there was a lack of literature examining whether the successful implementation of primary care preventive services reduced adolescent tobacco use. An earlier UK literature review (Walker & Townsend 1999) on the role of general practice in promoting all types of teenage health supported the findings that teenagers rarely receive health advice from their doctors, and little research had been conducted to implement and evaluate smoking interventions for teenagers in General Practice.

##### UK Studies

A UK RCT published since the US review (Fidler & Lambert 2001) found a small significant difference between smoking rates of the young people in the intervention group, who received smoking information packs posted from their GP, compared with the control group. Some studies in the US review suggest a positive relationship between physician training and delivery of preventive services around tobacco use (Halpern-Felsher 2007).

## **5.2 Societal Level Policy and Interventions**

This section reviews research which provides evidence on the effectiveness of interventions (including policies) on smoking prevention through young people's societal influences such as reducing access, mass media campaigns and eliminating tobacco promotion. The influences of access to tobacco and its promotion on young people is described earlier (see Section 4.4).

### **5.2.1 Social Attitudes, Norms and Behaviours- Adults**

##### Reviews

It is widely accepted in the tobacco control literature that reducing adult smoking prevalence through cessation will also result in reductions in smoking prevalence in young people, for example in the recent report 'Beyond Smoking Kills' (ASH, CRUK, BHF 2008). This view appears to be mainly based, as in the ASH report, on the evidence that young people are more likely to become smokers if their parents smoke and/or if they live with other adults who smoke (see Sections 3.10

and 4.3.1). The literature search did not find any reviews which looked specifically at the impact that reducing adult smoking prevalence had on youth smoking prevalence. It may be that such reviews exist in the adult tobacco control literature but these fell outside the search criteria used in this review. However some of the studies included in the review, including those described in Sections 3.10 and 4.3.1, indicate that changing adults' smoking behaviours and attitudes about smoking can impact on youth smoking.

### Non-UK Studies

A longitudinal study in Massachusetts in the US explored the impact of banning smoking in local restaurants on the progression to established smoking in 12-17 year olds (Siegal et al 2005). The study found that young people living in towns with strong smoking regulations had less than half the odds of progressing to established smoking (having smoked over 100 cigarettes) than those in towns with weak regulations. This effect was greater the longer the regulations had been in place. While adult prevalence rates did not decline over this period, there was a threefold increase in the odds of making a quit attempt among adult smokers in the towns with the strong regulations (Albers et al 2007). There was also a reinforcement of anti-smoking norms among adult smokers who already regarded smoking in restaurants and bars as socially unacceptable. This study provides evidence that changes in adult smoking behaviours, including reducing the number of smokers that young people see in public places, and in adult social norms can contribute to preventing youth smoking uptake by reducing the perceived social acceptability of smoking among young people.

## **5.2.2 Access**

### Reviews

A Cochrane systematic review assessing the effects of interventions to reduce underage access to tobacco by deterring shopkeepers from making illegal sales included data from 35 studies published up to 2008 (Stead & Lancaster 2005). The reviewers found that giving retailers information (e.g. about their legal obligations) was less effective in reducing illegal sales than active enforcement or multi-component education strategies, or a combination of these. None of these methods achieved complete, prolonged compliance and from three controlled trials, there was no clear effect on young smokers' perceptions of ease of access to tobacco or on smoking prevalence.

A recent review assessing future prospects for policies reducing tobacco use in the USA, looked at the evidence on supply-side strategies and concluded that the efficacy of proactive retailer

compliance activities on youth access and smoking prevalence had yet to be firmly established but should be part of a comprehensive package of preventive initiatives (Rabin 2007).

The National Institute for Health and Clinical Excellence (NICE 2008a) reviewed whether point of sale interventions deter shopkeepers from making illegal sales and prevent the uptake of smoking by children and young people. The evidence included a review of effectiveness (Richardson et al 2007) and qualitative research (Woolfall et al 2008, NICE 2008b). The literature review examined the effectiveness of interventions designed to prevent the illegal sale of tobacco to children and young people, and included studies published up to mid-2007. From the included literature, there was evidence that “access restriction interventions impact effectiveness in terms of the number of sales to young people, young people’s ability to access cigarettes and merchant compliance” (Richardson et al 2007). The reviewers found a paucity of information on whether interventions impacted on behaviours, attitudes, beliefs, intentions or perceptions; only two studies addressed the impact on young people’s smoking behaviour. The elements demonstrating an influence on number sales, ability to access cigarettes and retailer compliance included: active enforcement, comprehensive interventions, interventions produced by tobacco control bodies, requesting age/proof of ID, demographics of the vendor/merchant, site setting of the access intervention, and the demographics of the target audience. These worked best when combined with other youth prevention strategies. Only one of the studies reviewed was conducted in the UK, most were from the USA, however similarities in how and where youth acquired cigarettes indicated that some of the findings might be applicable to the UK (Richardson et al 2007).

The NICE guidelines developed from the review and other evidence recommended that: the government should support better enforcement of existing legislation and ensure that enforcement efforts are sustained over a number of years; local authorities and trading standards bodies should ensure that retailers are aware of legislation prohibiting under-age tobacco sales and make it as difficult as possible for young people (under 18 years) to get tobacco products (ensuring vending machines owners take reasonable precautions to prevent underage sales and give practical advice on how to do this); work with other agencies to identify problem areas; improve inspections and enforcement activities; assess whether a supporting advocacy campaign is required; discourage use of campaigns developed by the tobacco industry; and ensure all efforts are sustained (NICE 2008a).

Main and colleagues’ (2008) systematic review of six systematic reviews on youth access shared two-thirds of its included reviews with Richardson and colleagues’ data set and concurred with their findings. There was no evidence to deduce whether the effects of interventions on restricting young

people's access to tobacco products varied according to age, sex, ethnicity or socio-economic characteristics (Main et al 2008).

The qualitative research strand of the NICE guidance development with 11 to 17 year olds in England, explored young people's knowledge of the recent change in law concerning purchasing age restrictions, and how they and their peers might circumvent it to obtain tobacco (Woolfall et al 2008). (The legal minimum age at which tobacco can be bought in England and Wales changed from 16 to 18 years on October 1<sup>st</sup> 2007, and the focus groups were conducted from October to December 2007). As the quantitative data shows (see Section 4.4.1), young people could procure cigarettes from a wide variety of sources, including buying them online with minimum information checking by retailers. Proof of age schemes would not be effective in this situation or for young people purchasing contraband or illegally imported cigarettes and most respondents did not feel that the change in law for purchase age had, or would result in the prevention or cessation of smoking in under 18 year olds (Woolfall et al 2008). No evidence on the effectiveness of the change in age of sale was located for the UK.

A review by Ribisl and colleagues (2007) looked at the evidence on youth access to cigarettes via the internet, from a US perspective. Several studies reviewed suggested that most internet cigarettes vendors sold to buyers without verifying age. However the evidence suggested that few teenagers were buying cigarettes online in the US (Ribisl et al 2007). As the reviewers pointed out however, those that were buying online reported greater difficulty in obtaining cigarettes from retail outlets suggesting that if retail access becomes sufficiently restrictive, more young people might use the internet to obtain cigarettes. Of the four potential strategies internet retailers could use to reduce sales to minors (the posting of minimum age-of-sale warnings, the posting of health warnings, use of parental control filter information and age verification) most could be circumvented, and age verification at point of delivery was not offered by most postal delivery services (in the US) (Ribisl et al 2007). In the UK, a private members Bill has been proposed for tougher online retail age checks, a system which is currently self-regulated (Bill 57 0708).

### **5.2.3 Price and Taxes**

#### Reviews

The recent UK systematic review on the effects of price on the cigarette smoking behaviour of the impact of price on cigarette smoking in young people aged 25 years or under (see also Section



4.4.2) concludes that overall, price is likely to be an effective economic instrument in reducing cigarette smoking among young people (Godfrey et al 2009). Examining smoking initiation and cessation outcomes, the reviewers found that price was effective in deterring young people from starting to smoke (one study found greater price elasticity for those under 18 years compared with those aged over 18 years) and was effective in encouraging young people to quit, but the effect was more moderate in terms of encouraging sustained cessation. The review authors note that most of the evidence base is North American and the relative costs of cigarettes are higher in the UK (Godfrey et al 2009). Smuggling and illicit cigarettes sales (West et al 2008) and social market sources (Godfrey et al 2009) subvert the effects of increased prices and taxes, which then have particular implications for smoking-related health inequalities.

## **5.2.4 Tobacco Marketing**

The impact of mass media advertising and a vast array of marketing communications on young people's smoking have been well established, and this evidence base led to a comprehensive ban being imposed in the UK. Furthermore evaluation of the ban shows that it is beginning to reduce young people's awareness of tobacco marketing and branding, as well as their susceptibility to smoking (Moodie et al 2008), research which is discussed in more detail below. However two sources of brand and product information persist after the ban's implementation: POS display and packaging. The former has been researched more thoroughly than the latter.

### UK Studies: Point of Sale (PoS) Marketing

A UK-wide long term research project examined the impact of the Tobacco Advertising & Promotion Act's 2003 implementation on young people. Waves of data were collected both before and after the ban using face-to-face interviews and self-completion questionnaires with a cross-sectional sample of over 1,000 11 to 16 year olds across the UK at each wave. Data collection continues biennially. A study of the first three waves of data (1999, 2002 and 2004) found significant declines in awareness of tobacco marketing (measures include PoS marketing: signs or posters in shops, free trials, free gifts, special price offers and new pack designs) and perceived peer smoking prevalence both of which are linked to smoking susceptibility (Moodie et al 2008). The odds of a young person's susceptibility to smoke increased by 7% for each form of tobacco marketing they were aware of. Thus the Act is protecting young people in the UK from tobacco marketing and reducing perceived prevalence (Moodie et al 2008). Although the current PoS regulations were not in place at wave 3, the study shows that partial bans are ineffective as

awareness of unregulated marketing was still very high. Structural equation modelling with data from a sample of 926 respondents from the 2004 wave (wave 3) supports this (Grant et al 2007). Grant and colleagues demonstrate that cigarette brand image and familiarity are powerful predictors of adolescents' intention to smoke – a more significant predictor on future smoking intentions than peer influence. This demonstrates that marketing by tobacco manufacturers impacts on adolescent smoking even after the introduction of advertising bans and the authors call for the complete removal of product displays at PoS and for generic packaging.

Subsequent analysis of the same data set shows that, since the implementation of TAPA, PoS has taken over as the most important source of tobacco marketing for young people (CTCR 2008). In 2006 it was recalled by 46% of UK teens. The related marketing tools of posters (which are now only present at PoS), new pack designs and special price offers (which are both displayed at PoS) remain prominent. They are recalled by between 18% (up from 11%) and 27% of UK teenagers.

#### UK and Non-UK Studies: Plain Packaging

The role of branding in youth smoking and the importance of the pack and pack display as a conduit for this branding has already been noted (see Section 4.4.5). It is also clear that children – and especially those from deprived backgrounds – find tobacco packs particularly enticing. Scheffels shows how *“cigarette brands and cigarette package designs are given meaning in relation to personal characteristics, to social identity and to positions in hierarchies of status...”* (Rossell 2008 as cited by Hastings et al 2008). In this way they become props for self expression. Roper and Shah (2007 as cited by Hastings et al 2008) confirm the symbolic importance of the brand among pre-adolescents (7-11 year olds) allowing them to feel part of their reference group and, in the case of less well off children, helping them disguise their disadvantage. Similarly, research in North America reveals how young people use branded cigarettes to appear fashionable, popular and smart (Rootman and Flay 1995). The pack livery (i.e. the pack design and colour scheme) also distracts attention from the health warning (Goldberg et al 1999, Beede and Lawson 1992). Research in the UK (ASH, CRUK, BHF 2008) and Australia (Wakefield 2008) does suggest that generic packaging can reduce this appeal, but as yet the policy has not been implemented in any jurisdiction, so full evaluation of effect has not been possible.

### **5.2.5 Mass Media**

#### Reviews

The role of the media in reducing tobacco use was systematically reviewed in 2008 by the National Cancer Institute (Davis et al 2008). Studies amassed for the review were very varied in terms of purpose and methodology and these limitations present interpretation problems; however the greater quantity suggest that mass media can be effective in reducing tobacco use. In terms of young people the evidence from controlled field experiments suggest that, when conducted in conjunction with school- or community-based interventions, anti-tobacco mass media campaigns can be effective in reducing smoking initiation. Evidence from population based studies suggests that mass media campaigns as part of multicomponent campaigns provide considerable evidence for reducing smoking in youths, although it is difficult to determine whether it was the program components working together that reduced prevalence, or single components. The few population based studies where the mass media campaign is the only programme, demonstrated a reduction in smoking for youth target populations (Davis et al 2008).

The second part of the National Institute for Health and Clinical Excellence (NICE 2008a) review and subsequent guidelines reported above, evaluated whether mass media interventions using a variety of channels to reach large numbers of people without relying on face-to-face contact prevent the uptake of smoking by children and young people. Based on the evidence collected, NICE made the following recommendations: national, regional or local mass-media campaigns to prevent the uptake of smoking among young people under 18 should be developed, but not in conjunction with the tobacco industry; that messages should be based on research and pre- and post-testing with the target audience with messages repeated in a number of ways and updated regularly; that strategies to reduce the attractiveness of tobacco and change smoking norms should be included and exploiting the full range of media used by children and young people; and campaigns should run for 3 to 5 years (NICE 2008a).

Richardson and colleagues' 2007 review, mentioned earlier, also comprehensively reviewed the literature on the effectiveness of mass media interventions in preventing the uptake of smoking in children and young people for the NICE guidance development, and included studies published up to mid-2007. The reviewers found evidence that mass media campaigns can prevent smoking uptake and influence children and young people's smoking knowledge, attitudes and intentions. Particular factors shown to influence effectiveness in terms of attitudes, perceptions, beliefs and intentions include: message source, content, format and framing; duration; the target audience and their demographics; and the site or setting of the campaign. Those factors shown to influence effectiveness in terms of smoking behaviours include: message content; the target audience and their demographics; duration of campaign; the number of anti-tobacco message sources; and the

TRUTH campaign (Farrelly et al 2009 (published since Richardson and colleagues' review), 2005). These factors are most effective when combined with broader tobacco control initiatives produced by tobacco control bodies, not the tobacco industry. The final conclusion drawn from the literature is that campaigns are the most successful when they are long-lasting with a high intensity of exposure (Richardson et al 2007). The majority of the studies reviewed were based in the USA thus it is not clear whether results will be directly applicable to the UK. However, it was concluded that the generic factors listed are likely to be transferable (Richardson et al 2007).

A review of material on youth tobacco use prevention campaigns from nine countries (Australia, Canada, England, Finland, the Netherlands, Norway, Poland, Scotland and the United States) (Schar et al 2006) draws much the same conclusions. In general, campaigns are most effective when part of a broader tobacco control program, include adverts with strong negative emotional appeals, introduce new persuasive information on health risks, use personal testimonies that youth find engaging, use a broad number of message sources, use sustained exposure over a significant time period and incorporate comprehensive formative, process and outcome evaluation plans (Schar et al 2006). These findings also build on the results of the earlier Sowden 1998 Cochrane systematic review and Slater's (2007b) analysis of media campaigns for the Institute of Medicine.

A review of 19 internet and computer-based interventions (Walters et al 2006) included four studies of interventions aimed at adolescents, with the goal of delaying smoking onset amongst never or experimental smokers and/or encouraging cessation amongst regular smokers. Of the four, two studies reported a significant reduction in smoking initiation and prevalence as a result of computer-tailored material being sent to the adolescent's home. In other words, the student is assessed by a survey and a series of messages are generated by the software based on some characteristic of the individual (e.g. their beliefs, efficacy and intention to smoke), printed out and sent to them ("second generation" programmes). The two interventions which did not have a significant impact, including Aveyard and colleague's (2001) intervention in West Midlands schools, are described by the reviewers as "third generation" interventions, where the programme may add, delete or rearrange components in response to the user (Walters et al 2006).

The NCI review examined the role of the entertainment media in discouraging tobacco use and found evidence from two experimental studies with adolescents in the USA and Australia that screening anti-tobacco advertisements before films can partially counteract the impact of tobacco portrayals in films (Davis et al 2008).

### UK and Non-UK Studies

An anti-smoking mass media campaign called 'Help – For a Life Without Tobacco' has been running Europe-wide (including in the UK) since 2005. Funded by the European Commission, the campaign has been the subject of both developmental and extensive post campaign evaluation research (Hastings et al 2008b). Campaign awareness has grown steadily and reached 60% among under 25s; it successfully raised contentious tobacco control issues, e.g. smokefree public places; television advertising drives traffic to the Help website, considered a trusted and reliable source of antismoking information; nearly 100,000 smokers have signed up for cessation coaching by email; and it successfully encouraged populations to “think responsibly” about smoking, an important step towards quitting (Hastings et al 2008b, Hassan et al 2007).

### **5.2.6 New Media**

'New media' include electronic forms of communication methods such as email, mobile phone text, photo and video messaging, and the internet, encompassing examples such as social networking websites, photo and video sharing websites, and downloadable podcasts. Research by Ofcom in 2007 on ownership of key media in households from a weighted sample of 2,368 8-15 year olds and their parents in the UK found that 71% of 8-11 year olds and 77% of 12-17 year olds had use of the internet at home and 79% of 8-11 year olds and 93% 12-17 year olds had mobile phones (Ofcom 2008). Internet access in the home was markedly different when analysed by socioeconomic groups, 86% of ABC1 households had internet access, compared with 63% of C2DE households. However out-of-home internet use (such as in schools or at friend or relative's home) was high (89%) for children (ages 8-15 years) from C2DE households, and 31% of C2DE children accessed the internet only outside their homes (Ofcom 2008).

### Reviews

Richardson and colleagues' (2007) review for NICE on which mass media interventions are effective in preventing children and young people from becoming smokers (see Section 5.2.5 above) (which includes studies published up to mid-2007) highlights the lack of published evidence on the effectiveness of new media. Instead, the review draws on expert opinion, noting that new media have a fragmented and fast-changing nature, interventions should be developed in collaboration with young people and new media can be used to reinforce other mass media but their message may be lost if used alone (Richardson et al 2007).

### UK and Non-UK Studies

No studies of prevention effectiveness were located in this literature search but there is some evidence of awareness-raising. In addition to the European Commission's 'Help – For a Life Without Tobacco' campaign discussed in the previous section which uses websites and other web elements as part of its mass media campaign (Section 5.2.5), the American Legacy Foundation's Truth campaign more recently focussed on a lower budget internet based 'viral' campaign, "Infect Truth", to pass on key campaign messages and create a "network of truth advocates" through befriending on social network sites (New York American Marketing Association 2008). The campaign's success was measured by tracking the peer-to-peer 'infection' emails and the subsequent traffic to the Truth website by following the link contained in those emails, in addition to the number of people adding Truth as a friend within their social networking profile and leaving comments. The numbers far exceeded the marketing agency's goal and expectations (New York American Marketing Association 2008).

### **5.2.7 Incentives**

#### Reviews

Kavanagh et al's 2006 systematic review of the evidence for incentive schemes to encourage positive health and other social behaviours in young people aged 11 to 19, within health, educational and community contexts includes studies published up to 2005. Sixteen outcome evaluations were judged by the reviewers to be methodologically well-founded and three were for delaying the onset or reducing the prevalence of smoking in young people. Of these three, one incentivised professionals and the others incentivised young people themselves. The intervention scheme which paid US\$0.50 to orthodontists for every anti-tobacco 'prescription' they gave to an adolescent patient showed no positive effect at follow-up, but the analysis showed that incentive schemes are effective in reducing smoking behaviours in the context of school-based competitions. The reviewers note that these findings are based on a small number of non-UK studies and the two class competition studies relied on self-reported smoking behaviour, but the positive findings are consistent with other systematic reviews of incentives in the health domain (Kavanagh et al 2006).

The 2008 Cochrane systematic review by Cahill and Perera on the use of incentives and competitions for smoking cessation (for smokers rather than to incentivise health professionals), found limited evidence of effectiveness for long-term cessation rates, and did not include programmes specifically for smokers under 24 years old and reports mean age data only.

### 5.3 Multi-component Policy, Community and Societal Level Prevention

#### Reviews

Focussing on the effects on social inequalities by population-level tobacco control interventions, Thomas and colleagues' (2008b) systematic review synthesised the evidence published up to early 2006. Studies where an intervention with the aim of changing the "social, physical, economic or legislative environments" of a population to make them "less conducive to smoking" were included when it affected the behaviour or attitudes of individuals or groups with different socioeconomic characteristics. In terms of children and young people, twenty studies which provided information about the effects of the price of tobacco products on young people were included; thirteen studies which evaluated restrictions on sales to minors were included; three which assessed the effects of restrictions on smoking in schools; three which assessed the effects of health warnings and labelling of contents on tobacco products on children or young adults; and two on the effects of advertising restrictions on young people. However, none of the studies on children and young people could provide evidence about possible differential effects by parental income, occupation or educational level (Thomas et al 2008b). It is unlikely that population policies would have the potential to increase social inequalities.

As part of the same research programme, Main and colleagues' systematic review (2008) evaluated the same issue on the evidence that 19 other systematic reviews could provide. Tentative evidence was offered that the effect of increasing the unit price of tobacco varied between adult socioeconomic groups and thus may have the potential to reduce smoking related health inequalities, also concluded by Thomas and colleagues (2008b).

The review by Sparks (2007) on advocacy as a tobacco control strategy in the US finds that there are too few studies which directly link decreases in prevalence of tobacco use or tobacco-related morbidity or mortality to run a formal meta-analysis. However, she draws the conclusion that the comprehensive approach of the 1990s (which ensured tobacco control was supported by state and federal programmes), including policy advocacy, has resulted in many policy changes for tobacco control that, in turn, have had an effect on tobacco use prevalence. By counting all the US state and local policies for tobacco control adopted during the preceding 15 years, the public advocacy approach had the most effect in altering the environment that supports tobacco use (Sparks 2007) and youth advocacy was a strategy for social and policy change.

Willemsen and De Zwart (1999) reviewed the evidence available at the end of the 1990s on a range of policies to reduce youth smoking and concluded that isolated actions had little effect. The measures they suggest combining for greatest effect are “*a complete ban on tobacco advertising, increasing prices, restricting tobacco product sales to tobacconists, mass media education aimed at youth and intensifying school education*”.

## **5.4 Youth Smoking Cessation**

This section provides evidence from published research on the effectiveness of interventions on smoking cessation with young people, starting with review-level evidence then summarising findings from the latest UK studies.

### **5.4.1 Youth Smoking Cessation Review Evidence**

The most recent review on youth tobacco use cessation located was Sussman and Sun’s 2009 paper which includes evidence published up to December 2007 (Sussman & Sun 2009). In it the results from another eight previous systematic reviews (Sussman et al 2001, 2002, McDonald et al 2003, Garrison et al 2003, Backinger et al 2003 as cited by Sussman & Sun 2009; Sussman et al 2006; Grimshaw & Stanton 2006; Gervais et al 2007) are integrated and the literature updated with later studies. This review found that there have been relatively few studies on youth cessation compared to those on adult cessation, though the number has increased in recent years. Only 130 studies were identified of which just over half (64) had control groups (32 were RCTs) and were therefore included in the review. Many of the reviewed studies had methodological weaknesses including lack of randomisation to intervention and control groups, with only 59% having biochemical validation of smoking status. In addition, studies varied in their definitions of smoking status, the period of follow up (which ranged from one to twelve months) and study participant characteristics. The review authors therefore did not carry out a traditional meta-analysis but compared the mean cessation rate in the intervention groups with the mean cessation rate in the controls. They found a difference of 3.28% across the 64 studies. This was described as a 53% ‘reduction’ which converts to around a 6.2% average quit rate in the intervention groups and 2.9% in the controls. Given differences in follow up periods it is difficult to compare these rates with those found in adult cessation studies, though they would appear to be considerably lower.



It was also difficult to distinguish which approaches were more effective than others or for which types of young smokers. However Sussman and Sun conclude that in order for a successful outcome youth cessation programmes should be delivered in a context structured for young people (e.g. school, sports club, health clinic), who tend not to impose structured situations on themselves; they should consist of a minimum of five sessions; and programmes should be designed to maintain young people's interest by making the programme engaging (by using games, dramatisation or alternative medicine concepts, for example). The evidence is not clear as to which of the following three types of programming is superior or whether they suit different young people and thus Sussman and Sun advise a combination of content: cognitive-behavioural, motivation theory-related and social influences. There is tentative evidence from the literature that using a number of communication channels is optimal; supplementing the classroom or school clinic with, for example, computer channels, parent groups or mass media. Cessation programme efficacy is positively related to programme dosage, however there is no incremental effect beyond five sessions. Sussman and Sun (2009) find little evidence on the effectiveness of pharmacotherapies for young people (e.g. see the Nottingham study by Roddy et al 2006), whereas the evidence is strong with adults.

With regard to the applicability of the findings to the UK, very few adolescent tobacco use cessation studies included in the review (Sussman and Sun 2009) were conducted outside the USA (17 of 64) and the results do not vary systematically by whether data are from USA or not (Sussman 2002, Sussman et al 2006). Four UK studies are included: Audrey et al 2006 (ASSIST), Bloor et al 1999, Aveyard et al 1999 and Charlton 1992 – the first two studies are new to the 2009 analysis.

A qualitative literature review of the evidence on smoking cessation in primary care settings for adolescents in the US found that adherence to clinical tobacco guidelines has been difficult for many doctors as the US health care system was not designed to address behaviour change (McVea 2006). McVea argues that the findings of an earlier Sussman review (Sussman 2006) are unrealistic for a clinical setting. From the literature, barriers to adolescent cessation include: whether the young person identifies themselves as a smoker or not; seeing the young person without a parent present, doubling the visit time; tobacco is one of the many risks doctors may wish to counsel young people on; and physicians' lack of training, a perceived lack of effectiveness, and lack of support staff and materials (McVea 2006).

Grimshaw and Stanton's Cochrane systematic review of tobacco cessation interventions for young people under 20 years was published in 2006 and is included in Sussman and Sun's latest review

(Sussman & Sun 2009). The authors are in the process of updating the review with evidence published since then (see Grimshaw & Stanton 2008). The main findings of the 2006 Cochrane review were that there was insufficient evidence from controlled trials with six month follow-up to assess the effectiveness of smoking cessation programmes for adolescents; although complex programmes, such as those also targeting young people's families or communities, and behavioural therapy programmes showed promise (Grimshaw & Stanton 2006). Additionally, they concluded that pharmacotherapies or using NRT with psychosocial support had not been sufficiently tested with the under 20 years age group to demonstrate effectiveness.

#### **5.4.2 Youth Smoking Cessation Studies**

A number of studies have recently looked at the design of smoking cessation services for young people, in terms of their effectiveness and delivery.

A process and outcome evaluation of a three year, Scotland-wide, youth cessation pilot programme comprising eight projects funded to engage with and support 12 to 25 year olds to quit smoking was recently conducted by a consortium of researchers (independent from the funders) with a specific focus on service uptake and effectiveness (Gnich et al 2008). One of the main findings was the difficulties the projects had in recruiting clients ( $n=470$  at baseline). Previous needs assessment work had indicated young smokers were interested in quitting and getting support and young people were involved in designing the projects. However, the cessation projects found that young people were not proactive in seeking support and project staff underestimated how much they would have to 'sell' the cessation service. Young people did not see themselves as smokers thus did not think of themselves as addicted or requiring help. The overall quit rate was low. At 3 months follow up, 269 participants reported attempting to quit but only 39 were CO-validated quitters and only 11 of these were CO-validated quitters at 12 months, giving an overall quit rate of 2.4% (Gnich et al 2008). The authors highlight that such low participant numbers do not allow conclusions to be drawn about the relative effectiveness of the eight different projects, and that there is little support from the findings for developing dedicated youth cessation services in Scotland (Gnich et al 2008).

When asked about their preferences for smoking cessation, 13 to 18 year old smokers in a small qualitative study in south-east Wales did not think that a smoking cessation service was something that would be available to them and thus found it difficult to describe attributes that such a service could support them with (MacDonald et al 2007). Although based on a localised sample, the research found that the current model of cessation service did not fit the preferences and underlying

values of the young smokers; who instead preferred support from friends and from family, particularly emotional support, access to NRT and more flexible support (e.g. drop in sessions) and guidance from outside the school setting. The authors recommend designing an intervention with the service users at the core (MacDonald et al 2007). An earlier study using a survey and qualitative methods with 15 to 19 year olds in the Solihull area found that knowledge of the existing smoking cessation services was poor and young people were concerned about privacy and confidentiality (Grimshaw et al 2003). A much larger study incorporating a survey and focus groups with 13 to 16 year olds from a random sample of ten schools in Nottinghamshire found from the survey that one fifth of the sample were smokers, half of whom wanted to quit smoking; the focus groups sample were taken from this sub-section (Molyneux et al 2006). Most in this sample were aware of smoking cessation methods as almost all had tried to quit unsuccessfully, and thus had low perceptions of the effectiveness of different strategies. These study participants expressed a preference for school-based smoking cessation services, offering confidential professional counselling and NRT during school time (Molyneux et al 2006).

From research conducted in 2001-02 with NHS smoking cessation coordinators, young smokers were rarely prioritised targets of the service and services were generally set up for people of 16 years and over and strategies for attracting young smokers to the services were the least well developed (Pound et al 2005). Some of the coordinators surveyed expressed the view that young smokers required different models of service delivery. Calls have therefore been made to extend to smoking cessation service provision to under 16 year olds, extending both the provision of information on smoking and the range of interventions (Denscombe 2007). Although, as the studies above indicate, young people expressing a desire to quit smoking does not necessarily equate to determined efforts to quit or the use of such services.

Grimshaw and Stanton's recent BMJ editorial (2008) on youth cessation argues that young people should be still be supported non-judgmentally after unsuccessful attempts and encouraged to make new attempts. They identify that an overwhelming barrier to quitting for some young people will be those who continue to smoke cannabis mixed with tobacco, also found by Amos and colleagues (2006).

A qualitative study conducted with 99 16 to 19 year olds in Lothian, Scotland in 2002 on young people's smoking attitudes and behaviours found that although many respondents expressed an interest in quitting, it was not a priority (Amos et al 2006). Perceived barriers related to the habitual and social aspects of their smoking. Few expressed an interest in smoking cessation services or

NRT, feeling instead that these were for older, addicted smokers. Respondents believed the most effective strategy to be willpower, thus the authors conclude that cessation services should be based on this mid- to late-teens age group's understanding of smoking and the social factors which influence and support their smoking behaviour (Amos et al 2006).

Younger male Bangladeshis from a qualitative study in London aged 18 to 60 years highlighted that NRT was a product from which their community was excluded as it was primarily marketed to White middleclass smokers. It could be seen as an alternative but similarly expensively priced source of nicotine, rather than acting as a replacement to aid successful cessation. The younger, educated participants appeared to be more knowledgeable about the role nicotine has in tobacco use but were prepared, however, to use a traditional chewing tobacco product (paan) as an aid to cessation rather than medicinal nicotine (Croucher & Choudhury 2007).

Recent evidence from the USA examines the relationship between adolescents' reasons for quitting smoking, barriers to quitting and their smoking cessation efforts. Major barriers to teenagers in New York City quitting smoking was the stress of cravings and lack of social support from friends and family, which the authors found in their qualitative study, resulted in a more stressful experience than that usually acknowledged by the research (Falkin et al 2007). Using psychometric scales with 14 to 19 year olds, perceived social disapproval (by family, peers and the community) and long-term concerns about smoking in the future significantly predicted subsequent cessation attempts over the six month and three month, respectively, follow up period (Myers & MacPherson 2008). A study on cessation intentions of college students studying in Washington, Oregon and Idaho found that females and students at the beginning of their degree were more likely to be planning to quit before their graduation, as were students who had decreased the amount they smoked since starting college (Harris et al 2008).

### **5.4.3 Pharmacotherapy**

Nicotine replacement therapies (NRT) relieve withdrawal effects and increase the chances of successful quitting in adults, and are currently regulated in the UK within the regulatory framework of medicines (Royal College of Physicians 2007). In 2005, accessibility was widened in the UK to include young smokers from 12 years and the period of use was extended to nine months. There are some stringent retail accessibility conditions compared to the sale of cigarettes. However NRT products have been available on reimbursable NHS prescriptions since 2001 and children under 16

years, pregnant women, young people in full-time education and people in receipt of certain benefits such as Income Support or Jobseekers' Allowance receive prescriptions free of charge.

### Reviews

McVea's review (2006) found that Bupropion had not been shown to be effective in adolescent smoking cessation but cited a US randomised, three-arm double-blind pilot study using NRT patches which found similar statistically significant abstinence rates for young people as those in adult studies. However three other randomised or open label studies of NRT failed to find significant effects.

### UK Studies

A pilot study in a deprived area of Nottingham with 11-21 year olds used an RCT design to determine whether NRT combined with counselling was effective in young deprived smokers (Roddy et al 2006). Ninety-eight smokers were recruited with half assigned to receive nicotine patches and half the placebo for a six week course. At four weeks, five NRT subjects and two placebo subjects were abstinent but at 13 weeks none of the subjects abstained from smoking. Adherence to therapy was low, and thus the authors conclude that NRT in this context is unlikely to be effective. They also argue that even when young smokers appear to want to quit, establishing the efficacy of youth cessation services will be difficult (Roddy et al 2006).

## **5.4.4 Increasing Intentions to Quit and Quitting**

### UK Studies

A sample of young adult smokers aged 18 to 25 years at a large English university were used to explore the effect of learning that one has a higher risk of heart disease due to a genetic vulnerability to the adverse effects of smoking upon motivation to quit smoking (Wright et al 2006). The research found that while genetic risk information has the potential to motivate intentions to quit, self-efficacy perceptions should also be considered. Smokers who received gene-positive risk information had higher intentions to quit than smokers in the no-testing group. However, stronger intentions to quit were also associated with higher levels of self-efficacy regardless of the risk information received (Wright et al 2006). Similarly, a message based on the fear of developing early blindness may motivate teenagers to stop smoking. More teenagers said they would stop smoking on developing early signs of blindness compared with early signs of lung or heart disease in a cross-sectional survey with a fairly large convenience sample of 16 to 18 year

olds in England (Bournemouth, Winchester, Manchester and Southampton) with a high response rate ( $n=260$ ; 92%) (Moradi et al 2007).

A motivational interviewing intervention trial with students from further education colleges in inner London (mean age 17 years) found that after a single motivational interviewing session, where participants were counselled individually on the risks of substance use, there was weak evidence of a reduction in use 3 months later among daily cigarette smokers (Gray et al 2005). Although students were almost four times more likely to have reported attempting to quit or cut down their smoking for one week during the study, the lack of difference between them and the control group at 3 months indicated that the attempts were not maintained (Gray et al 2005). After 12 months, the main effects of the session had disappeared for cigarette smoking and the between group difference was not significant (McCambridge & Strang 2005b).

## 5.5 Conclusions

The literature review found clear evidence of the effectiveness of certain types of smoking prevention policy, interventions and programmes. The review identified a range of different types of evidence including controlled and non-controlled studies of single and multi-faceted interventions in different settings, evaluations of local and national tobacco control policy changes, and, where interventions or policy changes have yet to be introduced, evidence from quantitative and qualitative studies (including relevant tobacco industry document studies) of the likely impact on young people. The interventions have been categorised into several groups which reflect the strength and consistency of the evidence from the reviews and individual studies in terms of impact on smoking behaviour;

- *Most effective approaches:* comprehensive, multi-component, well-funded, sustained, tailored prevention approaches that address all three levels of influence identified in Section 4. However there is little evidence to show which are the key or most important elements and whether the effects are additive or multiplicative. This reflects the challenges of evaluating multi-component programmes as it is often neither feasible (e.g. economically) nor practical (e.g. national/state legislation) to use comparable control groups/areas or compare different combinations of interventions. There is clear evidence that *combined* school and community interventions, and mass media and community interventions, are more effective than school, mass media and community *only* interventions.

- *Consistent evidence of high impact*: increases in price through taxation; comprehensive bans on tobacco promotion/marketing; mass media campaigns that are tailored, have an appropriate tone, are sustained and of high intensity; reducing adult (parents) smoking prevalence through increased cessation; parenting skills programmes for parents of pre-teens/young adolescents.
- *Consistent evidence of some impact and/or some evidence of high impact*: interactive school health promotion programmes using social skills and social influences approaches which are intensive and sustained (15+ sessions); positive, supportive and caring school ethos (i.e. the health promoting school), community (some approaches); smokefree public places.
- *Mixed or inconclusive findings*: family education, school only programmes; primary care, local enforcement of sales laws; community only programmes; incentives; computer and internet based programmes.
- *No effect*: schools based information only programmes; Smokebusters; tobacco industry media campaigns.
- *Lack of evidence*: increasing age of sale; banning packs of ten cigarettes.
- *Promising but limited evidence to date*: peer led school programmes (ASSIST); banning point of sale advertising; digital/new media; plain packaging; reducing positive media images of smoking.

The final category of *promising but limited evidence* includes three types of potentially important interventions: the ASSIST peer led school programme which has shown sustained reduced smoking prevalence in one trial in Wales and South West England, policy changes where there is substantive research evidence indicating that they would be likely to be effective but have not yet been introduced or formally evaluated in countries where they have been introduced (point of sale, plain packaging, media images), and new and emerging areas which appear to have considerable potential but where little evaluation research has so far been undertaken (new and digital media).

Unfortunately very few reviews or studies analysed the impact of prevention interventions by age, gender, socio-economic status or ethnicity. In addition nearly all the studies focussed on the secondary school age group (mostly in North America). Thus it is not possible to draw conclusions about the possible differential impact of interventions on different groups of young people living in different contexts, i.e. what works for whom in which circumstances, nor which interventions could be particularly important in reducing inequalities. The review also did not consider non-tobacco policy interventions or programmes which might address some of the social, economic and educational pathways and trajectories that underlie both youth inequalities and smoking. Finally

most of the intervention studies focussed on pilot studies with few studies looking at effectiveness of interventions when rolled out into non-experimental settings and routine practice.

The evidence on the effectiveness of youth smoking cessation interventions is less clear. A recent review found a higher overall mean quit rate in the intervention groups compared to the control groups in cessation trials, but the quit rates were much lower than that found in adult studies and NHS cessation services in England. Also many of the studies were methodologically weak with variable definitions of smoking status being used, most lacked biochemical validation of quit status and had variable end points/follow up periods. In addition British research has identified numerous challenges in engaging with young smokers around smoking cessation and cessation service uptake, even when the services are designed to meet young smokers' needs. They also highlight that for many young smokers the distinction between prevention and cessation is blurred. While the limited evidence of effectiveness may in part be due to the much more limited research in this field compared to adult cessation studies, it also reflects the way in which young people understand their smoking and addiction, the competing priorities in their lives and their reticence in accessing formal support, as described in Section 4.



## **6. THE WORKSHOP**

### **6.1 Workshop Methodology**

#### **6.1.1 Background**

As part of the research project it was decided also to bring together experts (originally planned to be 15) in young people and smoking at a workshop to consider the draft report, identify gaps in the research review and consider the evidence on the likely effectiveness of future policy options. Potential participants were contacted early in the project to secure their involvement and to provide suggestions of reviews and studies to be included in the report. Suggested participants included members of the Department of Health tobacco team, Policy Research Programme, the project team and experts in tobacco control research and policy including three international experts from countries which have had success in reducing youth smoking. It was also proposed that the international experts contributed to producing brief national policy case studies for presenting at the workshop.

#### **6.1.2 Purpose**

While a short period of time was spent in looking at the review, detailed comments additions and amendments were dealt with outwith the event and the main focus and purpose of the workshop was clearly stated to all those taking part: To identify the key issues in relation to future policy options on relation to young people and smoking.

Also identified was the importance of developing new ideas and encouraging lateral thinking – going beyond what has been done to explore what could be new and different approaches, and the importance of not being restrained by the evidence of what has been done but rather exploring new avenues and options.

#### **6.1.3 Format**

The workshop was in two parts:

1. *A networking event* - It began on the evening of 7<sup>th</sup> January with a networking dinner designed to bring participants together to get to know one another but importantly to set the scene for the work of the following day. The invitation explained that the dinner on Wednesday

the 7<sup>th</sup> was the prelude to the workshop, with short informal presentations to get participants thinking about the issue from the viewpoint of being a young person. (See Appendix 1)

*2. The formal workshop* - The workshop itself took place on the following day (January 8<sup>th</sup>). The programme was designed to optimise discussion of the issues with inputs from four speakers. These included a summary of the review document and the three international case study presentations. The programme also allotted time to both plenary and small group discussions. The small group discussions focused on the task of identifying two/three policy options.

#### **6.1.4 Participants**

A total of 23 participants attended the workshop. These included academics, policy makers and practitioners (Appendix 2). Participants were allocated into groups to ensure a mix of policy makers, academics and practitioners. A copy of the full programme is included in Appendix 3.

## **6.2 Inputs to the Workshop**

### **6.2.1 Scene Setting**

As described above, four speakers were asked to contribute to the scene setting on the evening prior to the workshop. Their presentations are summarised here.

#### Gerard Hastings

Gerard's presentation emphasised the importance of understanding the new digital media and of building bridges with young people in order to be able to operate in the virtual world of hyperspace which they have so effectively colonised. He argued for taking a leaf out of the commercial marketers, who operate very effectively in the new media, understanding that the consumer now has the real power and that the great brands are those whose customers tell stories about them. He described the concept of earned, bought and 'owned' media - owned media being the most valuable as it is 'self-generated' by the consumers and perpetuated in the virtual world by them, as 'ownership' enhances and develops the message, increasing its impact as it becomes more relevant and meaningful to them.

This is a far cry from the traditional approach of social marketing, that rather than involving young people, 'targets' them in a way that is usually more meaningful to those promoting the message. He

made the case that understanding the world of young people, communicating with them via the new media, using messages that are relevant to them and allowing them ‘ownership’ of the message (inevitable, if an idea is to be successful in having an impact in an environment in which there are so many competing for attention) is the only media strategy aimed at young people likely to be effective. Illustrating his point, he showed a short video clip of the Adidas campaign ‘Impossible is nothing’ – with its powerful appeal to hearts and minds. Reminding the audience of the USP of tobacco control (“We are authentic”) Gerard finished his short presentation by welcoming the challenge and the active participation of ‘our consumers’ in a campaign to address tobacco and young people.

### Daniel Clayton

Describing his work with young people, Daniel emphasised the importance of the time it takes to build trust with young people and to establish relationships, reminding the audience that this can take months and that on-going dialogue and engagement with young people are important. He also made the point that young people are not interested in communication that is ‘word heavy’. Illustrating his point with examples of a language that is almost foreign to many older people, he demonstrated the speed and efficiency of the texting generation in getting their messages to one another. Finally, he reminded the audience and that young people are faced with a myriad of issues/problems (sexual health, alcohol, exams, family parenthood/children etc) thus smoking is not necessarily the number one priority for them, but without the input of young people, any campaign targeted at them or communication with them will be ‘out of touch’ and ineffectual.

### Martin Raymond

Martin’s presentation illustrated many of the points raised in Gerard Hastings’s - identifying characteristics of a good media campaign. Emphasising that his presentation was about young people not smoking, he showed a clip from a HEBS (Health Education Board for Scotland, now NHS Health Scotland) TV advertising of 1999 (Stinx campaign), aimed at 10-14 years olds. While the campaign itself was not evaluated at the time, the success of the media campaign was evident in the appeal of the advertising to young people. The ad featured a mock girl band singing ‘Why Do You Keep on Running Boy?’ - who found they were no longer attractive to the opposite sex because they smoked. The single became a best seller making the top five in 2000. The campaign generated a dialogue with young people on-going 10 years after the original showing, with a current Facebook presence demonstrating that the effect of the engagement may be felt long after the initial impact.

The on-going dialogue, the connection and engagement with young people and acknowledging that smoking is part of young people's lives in a complex way, were all important – the Stinx ad was successful because it managed to get into the culture of the age group and focus on things that were important to them. Finally, Martin made the point that, if progress is to be made in finding a new approach that has any chance of being effective, rather than seeing young people as the target and the problem, young people themselves need to be seen as part of the solution.

### Ann Schulthess

Ann's presentation was a reminder that the need for the workshop to take a child/young person centred approach to addressing smoking derived from the universal need for respect and regard for individual rights - respect and rights which are no less important for children and young people. The UN Convention on the Rights of the Child gives children and young people access to very specific rights – the right to express views, the right to be taken seriously, the right to self-expression, and the right of access to information and for children to be protected from harm. She emphasised also the importance of young people participating in decisions that affect their lives. Helping young people gain the respect and rights to which they are entitled must be about empowering them through listening to young people and acknowledging that they know what is best for them. She put the challenge of addressing young people and smoking firmly in the context of how tobacco control can further advance these rights.

### **6.2.2 Summary**

There was general agreement among participants that all four presentations successfully set the scene in encouraging participants to rise to the challenge of beginning “to apply insight, ingenuity and creativity to the issue of young people and smoking”.

## **6.3 Workshop Day - Inputs**

### **6.3.1 Draft Review**

The first part of the programme for the day was presentation by Amanda Amos of the draft review followed by a plenary discussion of the review document, which all participants had seen prior to attending the workshop and some had already contributed to it. (No further detail is presented here as all comments were subsequently incorporated into the review document itself.) The main purpose of the summary presentation was to set the scene for the subsequent discussions and presentations.

### **6.3.2 ‘What Works’ - Three International Case Studies of Success in Reducing Smoking in Young People**

In the second part of the programme three invited speakers from North America gave examples of strategies that have proved successful in reducing youth smoking. Their presentations are described here and PowerPoint presentations are attached (Appendix 4).

#### Tim Dewhirst, University of Guelph, Canada – ‘A Canadian Case Study of Reducing Smoking in Young People’

This presentation demonstrated that young people have been a key target group for the tobacco industry and the importance of ‘capturing’ youth by maintaining the relevance of the industry’s efforts to smokers in these younger age groups. Key tobacco industry messages are ‘freedom’ ‘self-reliance’ and ‘independence’; and the image of Marlboro Man updated via Formula One and Indy car racing. Canada’s success in reducing smoking in adolescence is based on a multifaceted tobacco control strategy which includes a stringent regulatory environment.

#### Matthew Farrelly, RTI International, USA – ‘Tobacco Control Interventions for Youth and Young Adults—Perspectives from the U.S.’

Matthew described the importance of changing the environment in which young people grow up through a range of measures relating to smoking; the importance of education in the early years and the importance of persuasions that correct misperceptions and deglamorise smoking, and the ‘effectiveness’ of media campaigns that respect young people’s intelligence and that are empowering. He discussed correcting misconceptions about smoking. He raised the question of the effectiveness of schools based educational strategies and discussed the importance of making community based interventions work.

#### Karla Sneegas, Indiana Tobacco Prevention and Cessation, USA – ‘Fighting Youth Smoking in Indiana, USA’

Karla described VOICE (based on the TRUTH campaign) a community programme and media campaign in Indiana, which is youth-led and uses ‘guerrilla’ tactics. Its objective is to change social norms through exposing the tobacco industry’s manipulation of young people. The programme was developed in such a way that any organisation could pick up and use it, and was about young people themselves speaking out against the industry. In addition to youth prevention, VOICE also works with youth to develop their leadership skills. In 2007, many of these youth worked to advocate for

an increase in the state cigarette tax and upon the passage of the legislation to increase the tax, young people became involved in encouraging both adults and youth to use the increased price as an opportunity to quit smoking.

## **6.4 Discussion, Outcomes and Conclusions**

Working in small groups, the participants spent the afternoon discussing the draft review content and workshop inputs with a view to identifying two/three key policy options. There was a short panel discussion in response to these suggestions. The panel were: Linda Bauld, Matthew Farrelly, Tim Dewhirst and Karla Sneegas. This section summarises the outcomes of these discussions.

### **6.4.1 A Values Driven Sustained Approach**

#### Core Values

There was overall consensus and strong support that the recurring and underlying themes, that had been evident throughout the workshop, should be at the centre of and underpin any initiatives in relation to young people and smoking. These themes emerged as core values and included:

- The need for authenticity
- Empowerment of young people
- Engaging with young people
- Speaking with and listening to young people
- Developing trust

Without this basic philosophy, which is about making young people part of the solution, approaches will be out of touch and are likely to be ineffective.

#### Working in Partnership with Young People – Young People’s Summit

There was some discussion of whether initiatives should ‘involve’ youth or should be youth ‘led’ with a general agreement that a realistic way forward will involve young people themselves identifying the issues that are pertinent and relevant to them but a partnership approach that will ensure that all parties take the decisions determining when initiatives require youth leadership and when other agencies take responsibility for implementing strategies. Supporting and empowering young people to take responsibility, rather than an authoritarian approach that characterises some current approaches, will require a shift in the thinking of many of those currently working with young people. Likewise, the range and expertise of young people is such that their different

skills will lend themselves to very different tasks. Young people are assets whose skills should be used appropriately - some people will be more effective at lobbying policymakers, others working with their peers.

To achieve the above and to provide a starting point from which to develop strategies and initiatives, a young people's summit was proposed. The proposal received strong support in view of the success of the HELP manifesto on tobacco control produced by the Youth Forum of the European Commission which was both youth-led and 'edgy' (HELP 2008).

### Commitment

Securing and sustaining commitment was also seen as important and it was felt that it will be necessary to inform/educate people involved at all levels and all for stakeholders to embrace this way of thinking. Stakeholders will need to understand what is being proposed and that possible resistance to more radical approaches may require the involvement of a third party to allow government and others agencies to distance themselves and side-step contention that may arise.

### Clear Goals – Based on What has Been Achieved

Commitment emphasises also the need for along term approach to allow for change to happen and be sustained. This, in turn, impacts on strategy in terms of setting short, medium and long term goals. It was felt there is already a huge amount to draw on in terms of what has been achieved. Important also is the need to maintain effective interventions and to continue to focus on adult smoking since "youth inherit their community". There was also a strong view expressed for the commitment to sustain all initiatives.

## **6.4.2 Mass Media**

### Campaigns

There was substantial support for mass media youth-oriented campaigns that are sustained and have high exposure over realistic time-scales to ensure market penetration and impact, and that are also durable across the political spectrum. It was also felt that national campaigns need to be supported with regional campaigns in order to address local needs and create local ownership.

### New Media

Mass media campaigns need also to be integrated with the new digital media. Without pre-empting young people's own ideas, it was felt that strategies must address the use of digital/on-line media

and greater use of low-cost media and PR - for example for quitting contests. It was felt that destroying tobacco brands using ‘guerrilla’ tactics and on-line assassin strategies were those most likely to appeal to young people. However it was also recognised that there is a fine line to be drawn as regards activities that may be libellous, illegal or simply unacceptable and it will be important to ensure that activities do not cross these lines. It was pointed out that, whether or not young people should be “allowed to run with it” (see discussion above), becomes a redundant argument as regards digital media. In the new digital age, it is inevitable that young people will take ownership/hijack campaigns and campaign messages.

### The Message

There was considerable discussion of the kind of messages and strategies that young people have used and are likely to embrace. Young people need to be alerted to the fact that the tobacco companies very cleverly exploit their need to take control of their lives and create the illusion that this is what tobacco can do for them. The tables need to be turned so that the tobacco industry becomes the target. This has been found to be effective in, for example, the Truth campaign. Many young people have strongly held views about the ethical/non-ethical activities of global companies and the way they operate in the developing world. Again it was felt that this is a powerful route through which to engage with young people in relation to the exploitation of the tobacco companies – including also such things as the links between smuggling and the funding of terrorism.

### **6.4.3 Inequalities**

#### The Need to Focus on Inequalities

The importance of ensuring that existing inequalities in relation to young people and smoking remains at the forefront of the strategy was emphasised. Without this focus it was suggested that there is the risk of widening the gap if strategies are developed that are more relevant to those young people already least susceptible to becoming long term smokers. There is a strong view that many of the initiatives in deprived areas have suffered from ‘short-termism’ (in relation to funding) and that failure was therefore inevitable. A commitment to sustainability and longer-term investment is called for. So too is the need, in view of the long term health impact of smoking, for cost-effectiveness to be based on criteria similar to those used to measure the cost-effectiveness of clinical interventions and treatments.

#### Mental Health and Other Issues Related to Smoking and Inequalities



The compounding of factors in relation to the susceptibility and vulnerability of a young person becoming a full time smoker is also an issue that needs to be considered. Evidence from the US and UK shows that smoking is higher among those with mental health problems and that mental health problems are greater among those from lower social groups, emphasising the need to address these issues together (and further reinforcing the child/young person-centred approach.)

#### **6.4.4 Settings**

##### Schools

Schools are an important setting for work with young people. Specific approaches that use advocacy and peer support projects such as ASSIST were identified as models to be replicated. The positive focus of strategies that take an asset-based approach, developing life skills, personal efficacy and self-control and moving beyond smoking were also proposed, emphasising the importance of a child/young person-centred focus (see below). Work with young people in schools has the added benefit of the potential ‘trickle up’ effect. Schools initiatives are likely to be more effective if they are reinforced by a comprehensive policy. It was also pointed out that there is an opportunity, with PHSE (Personal, Health and Social Education) about to become mandatory in schools, to strengthen the national curriculum in relation to skills and content.

##### Community Initiatives

Community initiatives continue to be important as appropriate settings in which to engage with young people through peer-led youth projects. Using strategies that focus on the various transition stages of the target group of 16-24 year olds was also seen as important. It was suggested that using existing informal networks of young people rather than working with formal groupings is, on the basis of research with adults, likely to be more effective. Providing resources and training for all those teaching PHSE and youth workers (including using existing resources e.g. QUIT), to enable them to work effectively with young people, is also required.

##### A Child / Young Person Approach

Those who work in tobacco, alcohol, sexual health and drugs often have very little contact with one another and it was felt that the focus on individual problem behaviours, described as ‘silo working’, wastes resources, as well as reducing the young person to a set of behaviours rather than a whole person with individual needs. It also overlooks the important issue that the child that is at risk of smoking is also likely to be at risk in relation to other behavioural problems.

Addressing the fundamental needs of the young person rather than just behaviour requires professionals to work in a co-ordinated way – pooling resources and expertise. It was suggested that moving away from ‘silo working’ is difficult – services are currently set up to address specific problems and resources allocated accordingly – and tobacco and alcohol personnel will share the same building/offices but often have little contact. Added to this, there is (as yet) little evidence to support a generic approach (a US intervention that tried a more holistic multi-faceted approach did not yield clear results of impact.) Nevertheless, there was a strong view that there are advantages to be gained from working across disciplines and that tobacco control has a huge amount of experience and success to contribute.

#### **6.4.5 Supply, Pricing and Availability of Tobacco Products**

Addressing supply, pricing and availability of tobacco products was seen as important not only because of the impact on all smokers but especially in relation to the way in which easy and illegal availability of tobacco impacts on those in deprived communities. Cheaper prices and greater availability of tobacco, as well as billboard advertising exert a powerful influence in perpetuating the normalisation of smoking and, in turn, perpetuating inequalities.

The following measures were proposed to counter the effect:

- Restrictions and regulation – licensing of tobacco and geographical quotas for number of outlets allowed per head of population
- Point of sale advertising – the prohibition of point of sale display and advertising
- Promotion and marketing of tobacco and tobacco products –
  - A ban on the promotion of cigarettes in clubs
  - A ban on the promotion of cigarette and tobacco accessories – cigarette papers, lighters etc.
- Plain packaging – the prohibition of branding on tobacco product packaging
- Counter marketing – e.g. increase health warning size on packs
- Vending machines – prohibit sales of tobacco from vending machines
- Smuggling – increases in measures to control smuggling of tobacco
- Fines revenues - the use of fines revenues received by government (as a result of contravention of regulations by tobacco companies) to fund youth prevention programmes.
- A strategy to ensure that price (real price) continues to exert an impact on demand for tobacco products



#### **6.4.6 Cessation**

Although not identified as a key policy option by the groups, a number of important issues relating to youth cessation emerged in discussion.

Evidence (UK and New York State) points to a number of difficulties in addressing cessation with young people:

- Young people do not identify themselves as smokers and therefore do not engage with the idea of quitting.
- Young people generally do not see themselves as ‘addicted’ and that they can therefore stop whenever they wish and not in need of help.
- Young people who do express a desire to stop may still be reluctant to seek help from formal sources/services.
- The relative cost-effectiveness of providing services – investment in promoting these and, where relevant, the cost of preferred incentives (e.g. mobile phones).
- The problem of identifying appropriate incentive schemes that do not conflict with peer bonds. For example, a stop-smoking project in Scotland that provided social support and gave incentives to participants, in the form of supermarket vouchers, provided a legitimate reason for behaving differently from their peers.

Nevertheless it was considered important to ensure existing cessation services are available (the NHS Smoking Helpline, QUIT and NHS stop smoking services, for example) to young people who wish to stop and in particular target groups of young people such as pregnant teenagers and their partners.

Reducing adult smoking prevalence (real and perceived) to influence youth smoking behaviour, through the ‘trickle down’ effect, was discussed and the importance of maintaining this strategy alongside youth-specific interventions was emphasised.

#### **6.4.7 ‘Joined-up’ Policy**

The need for a child/young person centred approach (see above) reinforces the need for policy as regards alcohol and other risk-taking behaviours to be more integrated

#### **6.4.8 Research and Evaluation**

While it was the case that no or only a limited evidence-base necessarily exists for some of the preceding proposed policy options, it was felt that research and evaluation must be integral to whatever policy options are adopted over the next ten years. Local as well as national evaluation is necessary to accommodate local policy issues. Research and evaluation should focus on:

- Developing a stronger evidence base
- Monitoring progress to achieving short, medium and long term goals
- Evaluating effectiveness of different components
- Evaluation progress towards achieving national targets
- Evaluating progress towards achieving local targets

A ten year plan could provide an opportunity to set up a national cohort study that could track patterns of smoking behaviours to understand smoking trajectories in young people from 11-21 over the decade as well as patterns of behaviour among the population of 11-24 year olds. It was also argued that prevalence data needs to accommodate and address the difficulties of young people's categorisation of smoking (through, for example, wider use of biochemically validated measures of smoking status) and other forms of tobacco use such as roll-your-own, shisha pipe smoking and cannabis.

## REFERENCES

- Albers A B, Siegal M, Cheng D M, Biener L, Rigotti N A. Relation between local restaurant smoking regulations and attitudes towards the prevalence and social acceptability of smoking. *Tobacco Control*, 2004; 13: 347-355.
- Albers A B, Siegal M, Cheng D M, Biener L, Rigotti N A. Effect of smoking regulations in local restaurants on smokers' anti-smoking attitudes and quitting behaviours. *Tobacco Control*, 2007; 16: 101 - 106.
- Amos A, Bostock Y. Young people, smoking and gender: A qualitative exploration. *Health Education Research*, 2007;22: 770-781.
- Amos A, Wiltshire S, Bostock Y, Haw S, McNeill A. 'You can't go without a fag...you need it for your hash'--a qualitative exploration of smoking, cannabis and young people. *Addiction*, 2004; 99:77-81.
- Amos A, Wiltshire S, Haw S, McNeill A. Ambivalence and uncertainty: experiences of and attitudes towards addiction and smoking cessation in the mid-to-late teens. *Health Education Research*, 2006: 21:181-91.
- ASH, CRUK, BHF. *Beyond Smoking Kills: Protecting Children, Reducing Inequalities*. 2008. London: Action on Smoking and Health.
- Audrey S, Cordall K, Moore L, Cohen D, Campbell R. The Development and Implementation of a peer-led intervention to prevent smoking among secondary school students using their established social networks. *Health Education Journal*, 2004, 63: 266-284.
- Audrey S, Holliday J, Campbell R. Commitment and compatibility: Teachers' perspectives on the implementation of an effective school-based, peer-led smoking intervention. *Health Education Journal*, 2008: 67, 74-90.
- Audrey S, Holliday J, Parry-Langdon N, Campbell R. Meeting the challenges of implementing process evaluation within randomized controlled trials: the example of ASSIST (A Stop Smoking in Schools Trial). *Health Education Research*, 2006: 21:366-77.
- Avenevoli S, Merikangas KR. Familial influences on adolescent smoking. *Addiction*, 2003: 98 Suppl 1:1-20.
- Aveyard P, Cheng KK, Almond J, Sherratt E, Lancashire R, Lawrence T, Griffin C, Evans O. Cluster randomised controlled trial of expert system based on the transtheoretical ("stages of change") model for smoking prevention and cessation in schools. *BMJ*, 1999: 319:948-53.
- Aveyard P, Markham WA, Cheng KK. A methodological and substantive review of the evidence that schools cause pupils to smoke. *Social Science and Medicine*, 2004: 58:2253-65.
- Aveyard P, Sherratt E, Almond J, Lawrence T, Lancashire R, Griffin C, Cheng KK. The change-in-stage and updated smoking status results from a cluster-randomized trial of smoking prevention and cessation using the transtheoretical model among British adolescents. *Prev Med*, 2001 33(4):313-24.
- Beede P, Lawson R. The effect of plain packages on the perception of cigarette health warnings. *Public Health*, 1992;106:315-22.
- Bloor M, Frankland J, Parry Langdon N, Robinson M, Allerston S, Catherine A et al. A controlled evaluation of an intensive, peer- led, schools-based, anti-smoking programme. *Health Education Journal*, 1999: 58: 17-25.
- Bradby H, Williams R. Is religion or culture the key feature in changes in substance use after leaving school? Young Punjabis and a comparison group in Glasgow. *Ethn Health*. 2006;11:307-24.
- Bradby H. Watch out for the aunties! Young British Asians' accounts of identity and substance use. *Sociology of Health & Illness* 2007 29:656-72.
- Bruce J, van Teijlingen E. A review of the effectiveness of Smokebusters: community-based smoking prevention for young people. *Health Educ Res*. 1999;14:109-20.
- Cahill K, Perera R. Quit and Win contests for smoking cessation. *Cochrane Database Syst Rev*, 2008 Oct 8;(4):CD004986.
- Campbell R, Starkey F, Holliday J, Audrey S, Bloor M, Parry-Langdon N, Hughes R & Moore L. An informal school-based peer-led intervention for smoking prevention in adolescence (ASSIST): a cluster randomised trial. *Lancet*, 2008: 371: 1595-1602.
- Carter OB, Donovan RJ, Weller NM, Jalleh G. Impact of smoking images in magazines on smoking attitudes and intentions of youth: an experimental investigation. *Tobacco Control*, 2007: 16: 368-72.
- Centre for Health Promotion. *Effects of plain packaging on the image of tobacco products among youth* . Toronto, Ontario, Canada: University of Toronto, 1993.

- Centre for Tobacco Control Research (CTCR). *Point of Sale Display of Tobacco Products*. London: Cancer Research UK. 2008.
- Charlton A. Smoking cessation help for young people: the process observed in two case studies. *Health Educ Res*. 1992;7:249-57.
- Cohen JE, Anglin L. Outlet density: a new frontier for tobacco control. *Addiction*. 2009;104:2-3.
- Conner M, Sandberg T, McMillan B, Higgins A. Role of anticipated regret, intentions and intention stability in adolescent smoking initiation. *Br J Health Psychol*. 2006 ;11(Pt 1):85-101.
- Conner MT (2005). *Full Report of Research Activities and Results. Understanding adolescent smoking initiation: A 4-year longitudinal study*. Published online by ESRC:  
<http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/ViewAwardPage.aspx?AwardId=2311> [accessed December 5 2008].
- Craig, R, Mindell, J. *Health Survey for England 2006. Vol 1: Cardiovascular disease and risk factors in adults*, The Information Centre. 2008a.
- Craig, R, Mindell, J. *Health Survey for England 2006. Vol 2: Obesity and other risk factors in children*. The Information Centre. 2008b.
- Croucher R, Choudhury SR. Tobacco control policy initiatives and UK resident Bangladeshi male smokers: community-based, qualitative study. *Ethnicity & Health*. 2007 ;12:321-37.
- Currie C, Gabhainn S N, Godeau E, Roberts C, Smith R, Currie D, Picket W, Richter M, Morgan A, Barnekow V *Inequalities in young people's health: HBSC international report from the 2005/2006 survey*. WHO Europe, Copenhagen. 2008.
- Davis RM, Gilpin EA, Loken B, Viswanath K & Wakefield MA (Eds.) *The Role of the Media in Promoting and Reducing Tobacco Use*. NCI Tobacco Control Monograph Series No. 19. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute. NIH Pub. No. 07-6242. 2008.
- de Vries H, Candel M, Engels R, Mercken L. Challenges to the peer influence paradigm: results for 12-13 year olds from six European countries from the European Smoking Prevention Framework Approach study. *Tobacco Control*. 2006; 15:83-9.
- de Vries H, Engels R, Kremers S, Wetzels J, Mudde A. Parents' and friends' smoking status as predictors of smoking onset: findings from six European countries. *Health Educ Res*. 2003a;18:627-36.
- Denscombe M. UK health policy and 'underage' smokers: the case for smoking cessation services. *Health Policy*. 2007; 80:69-76.
- Denscombe M. Uncertain identities and health-risking behaviour: the case of young people and smoking in late modernity. *Br J Sociol*. 2001;52:157-77.
- Department of Health. *Smoking Kills. A White Paper on Tobacco*. The Stationary Office, London. 1998.
- Department of Health. *Consultation on the Future of Tobacco Control*. London: Department of Health, 2008.
- Dewhirst T. Tobacco portrayals in US advertising and entertainment media. Chapter 9 in Jamieson PE & Romer D (Eds.) *The Changing Portrayal of Adolescents in the Media Since 1950*. New York: Oxford University Press, pp. 251-283. 2008
- DiFranza JR, Savageau JA, Fletcher K, O'Loughlin J, Pbert L, Ockene JK, McNeill AD, Hazelton J, Friedman K, Dussault G, Wood C, Wellman RJ. Symptoms of tobacco dependence after brief intermittent use: the Development and Assessment of Nicotine Dependence in Youth-2 study. *Arch Pediatr Adolesc Med*. 2007a ;161:704-10.
- DiFranza JR, Savageau JA, Fletcher K, Pbert L, O'Loughlin J, McNeill AD, Ockene JK, Friedman K, Hazelton J, Wood C, Dussault G, Wellman RJ. Susceptibility to nicotine dependence: the Development and Assessment of Nicotine Dependence in Youth 2 study. *Pediatrics*. 2007b ;120:e974-83.
- Dudas RB, Hans K, Barabas K. Anxiety, depression and smoking in schoolchildren--implications for smoking prevention. *J R Soc Health*. 2005;125:87-92.
- Emerson E, Turnbull L. Self-reported smoking and alcohol use among adolescents with intellectual disabilities. *J Intellect Disabil*. 2005;9:58-69.
- HELP – for a life without tobacco *Conference recommendations. "Communicating health, the tobacco example"* Brussels, 9-11 October 2008. Brussels: European Commission. Published online: [http://ec.europa.eu/health/ph\\_determinants/life\\_style/Tobacco/help/docs/ev\\_20081009\\_rec\\_en.pdf](http://ec.europa.eu/health/ph_determinants/life_style/Tobacco/help/docs/ev_20081009_rec_en.pdf) [accessed February 12, 2009]. 2008.

- Falkin GP, Fryer CS, Mahadeo M. Smoking cessation and stress among teenagers. *Qual Health Res.* 2007;17:812-23.
- Farkas AJ, Gilpin EA, White MM, Pierce JP. Association between household and workplace smoking restrictions and adolescent smoking. *JAMA.* 2000;284:717-22.
- Farrelly MC, Davis KC, Duke J, Messeri P. Sustaining 'truth': changes in youth tobacco attitudes and smoking intentions after 3 years of a national antismoking campaign. *Health Education Research*, 2009; 24:42-8.
- Farrelly MC, Davis KC, Haviland ML, Messeri P, Heaton CG. Evidence of a dose-response relationship between "truth" antismoking ads and youth smoking prevalence. *American Journal of Public Health*, 2005; 95: 425-431.
- Fidler JA, Wardle J, Brodersen NH, Jarvis MJ, West R. Vulnerability to smoking after trying a single cigarette can lie dormant for three years or more. *Tob Control.* 2006a;15:205-9.
- Fidler JA, West R, Jarvis MJ, Wardle J. Early dating predicts smoking during adolescence: A prospective study. *Addiction.* 2006b ;101:1805-13.
- Fidler JA, West R, van Jaarsveld CH, Jarvis MJ, Wardle J. Smoking status of step-parents as a risk factor for smoking in adolescence. *Addiction.* 2008b ;103:496-501.
- Fidler W, Lambert TW. A prescription for health: a primary care based intervention to maintain the non-smoking status of young people. *Tobacco Control.* 2001 ;10:23-6.
- Fidler, J. A., Jarvis, M. J., Mindell, J., West, R. Nicotine intake in cigarette smokers in England: distribution and demographic correlates. *Cancer Epidemiol.Biomarkers Prev.* 2008a.
- Flay BR (2008). *Effectiveness of School-Based Smoking Prevention Programs*. Prepared for the World Health Organization Tobacco Free Initiative, January 31<sup>st</sup>.
- Flay BR. The Long-Term Promise of Effective School-Based Smoking Prevention Programs. In: In: Bonnie RJ, Stratton K, Wallace RB (Eds.) *Ending the Tobacco Problem: A Blueprint for the Nation*. Committee on Reducing Tobacco Use: Strategies, Barriers, and Consequences Board on Population Health and Public Health Practice. Washington, DD: Institute Of Medicine Of The National Academies, The National Academies Press, pp. 449-477. 2007.
- Fletcher A, Bonell C, Hargreaves J. School effects on young people's drug use: a systematic review of intervention and observational studies. *J Adolesc Health.* 2008;42:209-20.
- Fry G, Grogan S, Gough B, Conner M. Smoking in the lived world: How young people make sense of the social role cigarettes play in their lives. *Br J Soc Psychol*, 2008;47:763-80.
- Fuller, E. *Smoking, Drinking and Drug Use Among People in England in 2004*. Health and Social Care Information Centre. 2005.
- Fuller, E., *Drug Use, Smoking and Drinking Among Young People in England in 2005*. Information Centre for Health and Social Care. 2006.
- Fuller, E. *Smoking, Drinking and Drug Use Among Young People in England in 2006*. Information Centre for Health and Social Care. 2007.
- Fuller, E. *Drug Use, Smoking and Drinking Among Young People in England in 2007*, Information Centre for Health and Social Care. 2008.
- Gervais, A., O'Loughlin, J., Dugas, E., Eisenberg, M.J., Wellman, R.J., DiFranza, J.R. A systematic review of randomized controlled trials of youth smoking cessation interventions. *Drogues, sante et societe*, 2007; 6, Supplement II, ii1-ii26.
- Glendinning A. Self-esteem and smoking in youth--muddying the waters? *J Adolesc*, 2002;25:415-25.
- Glendinning A, Inglis D. Smoking behaviour in youth: the problem of low self-esteem? *J Adolesc.* 1999;22:673-82.
- Gnich W, Sheehy C, Amos A, Bitel M, Platt S. A Scotland-wide pilot programme of smoking cessation services for young people: process and outcome evaluation. *Addiction* 2008; 103, 1866-1874.
- Goddard E, Higgins V. *Smoking, Drinking and Drug Use among Teenagers in 1998*, The Stationary Office, London. 1999.
- Goddard, E. *Why Children Start Smoking*, Office of Population and Census Survey and Department of Health. 1990.
- Godfrey C, Rice N, Slack R, Sowden A, Worthy G. *A Systematic Review of the Effects of Price on the Smoking Behaviour of Young People*. London: Public Health Research Consortium. 2009.
- Goldberg ME, Liefeld J, Madill J, Vredenburg H. The effect of plain packaging on response to health warnings. *Am J Public Health*, 1999;89:1434-5.



- Gordon J, Turner KM. Ifs, maybes and butts: factors influencing staff enforcement of pupil smoking restrictions. *Health Educ Res.* 2003b;18:329-40.
- Gordon J, Turner KM. School differences in pupil smoking: a consequence of a trade-off between health and education agendas? *Health Educ Res.* 2003a;18:580-91.
- Graham H, Francis B, Inskip HM, Harman J; SWS Study Team. Socioeconomic lifecourse influences on women's smoking status in early adulthood. *J Epidemiol Community Health.* 2006b;60:228-33.
- Graham H, Inskip HM, Francis B, Harman J. Pathways of disadvantage and smoking careers: evidence and policy implications. *J Epidemiol Community Health.* 2006a;60 Suppl 2:7-12.
- Grant IC, Hassan L, Hastings G, MacKintosh AM, Eadie D (2007). The influence of branding on adolescent smoking behaviour: exploring the mediating role of image and attitudes. *International Journal of Nonprofit and Voluntary Sector Marketing.* Published online, early view: September 11, doi: 10.1002/nvsm.329.
- Gray E, McCambridge J, Strang J. The effectiveness of motivational interviewing delivered by youth workers in reducing drinking, cigarette and cannabis smoking among young people: quasi-experimental pilot study. *Alcohol Alcohol.* 2005;40:535-9.
- Griesbach D, Amos A, Currie C. Adolescent smoking and family structure in Europe. *Soc Sci Med.* 2003;56(1):41-52.
- Grimshaw G, Stanton A, Blackburn C, Andrews K, Grimshaw C, Vinogradova Y, Robertson W. Patterns of smoking, quit attempts and services for a cohort of 15- to 19-year-olds. *Child Care Health Dev.* 2003;29:457-64.
- Grimshaw GM, Stanton A. Smoking cessation services for young people. *BMJ.* 2008;337:a1394.
- Grimshaw GM, Stanton A. Tobacco cessation interventions for young people. *Cochrane Database of Systematic Reviews* 2006, Issue 4. Art. No.: CD003289. DOI: 10.1002/14651858.CD003289.pub4.
- Guilamo-Ramos V, Litardo HA, Jaccard J. Prevention programs for reducing adolescent problem behaviors: Implications of the co-occurrence of problem behaviors in adolescence. *J Adolesc Health.* 2005;36:82-86.
- Guxens M, Nebot M, Ariza C, Ochoa D. Factors associated with the onset of cannabis use: a systematic review of cohort studies. *Gac Sanit.* 2007;21(3):252-60.
- Halpern-Felsher BL, Ramos ME, Cornell JL. Adolescents' and Young Adults' Perceptions of Tobacco Use: A Review and Critique of the Current Literature. In: Bonnie RJ, Stratton K, Wallace RB (Eds.) *Ending the Tobacco Problem: A Blueprint for the Nation*. Committee on Reducing Tobacco Use: Strategies, Barriers, and Consequences Board on Population Health and Public Health Practice. Washington, DD: Institute Of Medicine Of The National Academies, The National Academies Press, pp. 478-494. 2007.
- Halpern-Felsher BL. Interventions for Children and Youth in the Health Care Setting. In: Bonnie RJ, Stratton K, Wallace RB (Eds.) *Ending the Tobacco Problem: A Blueprint for the Nation*. Committee on Reducing Tobacco Use: Strategies, Barriers, and Consequences Board on Population Health and Public Health Practice. Washington, DD: Institute Of Medicine Of The National Academies, The National Academies Press, pp. 495-502. 2007.
- Hanson MD, Chen E. Socioeconomic status and health behaviors in adolescence: a review of the literature. *J Behav Med.* 2007;30:263-85.
- Harris JB, Schwartz SM, Thompson B. Characteristics associated with self-identification as a regular smoker and desire to quit among college students who smoke cigarettes. *Nicotine Tob Res.* 2008;10:69-76.
- Hassan L, Walsh G, Shiu E, Hastings G, Harris F. Modeling persuasion in social advertising: a study of responsible thinking in antismoking promotion in eight eastern EU (European Union) member states. *Journal of Advertising.* 36(2): 13-28.
- Hastings G. *The Influence of Point-Of-Sale (PoS) Tobacco Marketing on Adolescent Smoking: Implications for Tobacco Control in Ireland*. Report prepared for the Office of Tobacco Control, Ireland, by Centre for Tobacco Control Research at the University of Strathclyde. Dublin: OTC. 2003.
- Hastings G, Freeman J, Spackova R, Siquier P. HELP: A European public health brand in the making? In: Evans DW & Hastings G (Eds.) *Public Health Branding Applying Marketing for Social Change*. Oxford: Oxford University Press. 2008b.
- Hastings G, Gallopel-Morvan K, Rey JM. The plain truth about tobacco packaging. *Tobacco Control.* 2008a;17:361-2.
- Healthy Schools Newcastle-upon-Tyne & Gibber Theatre Company. *The TRUTH Evaluation Report*. Newcastle-upon-Tyne: Newcastle PCT, April. 2008.
- Henderson M, Ecob R, Wight D, Abraham C. What explains between-school differences in rates of smoking? *BMC Public Health.* 2008 20:218.

- Henriksen L, Feighery EC, Schleicher NC, Cowling DW, Kline RS, Fortmann SP. Is adolescent smoking related to the density and proximity of tobacco outlets and retail cigarette advertising near schools? *Prev Med.* 2008;47:210-4.
- Henriksen L, Feighery EC, Wang Y, Fortmann SP. Association of retail tobacco marketing with adolescent smoking. *Am J Public Health.* 2004;94:2081-3.
- Hunt K, Sweeting H, Sargent J, Lewars H, Cin SD, Worth K (2009). An examination of the association between seeing smoking in films and tobacco use in young adults in the west of Scotland: cross-sectional study. *Health Education Research.* 24:22-31.
- Jenks RA, Higgs S. Associations between dieting and smoking-related behaviors in young women. *Drug Alcohol Depend.* 2007;88:291-9.
- Joronen K, Rankin SH, Åstedt-Kurki P. School-based drama interventions in health promotion for children and adolescents: systematic review. *Journal of Advanced Nursing* 2008; 63:116-131.
- Kaczynski AT, Manske SR, Mannell RC, Grewal K. Smoking and physical activity: a systematic review. *American Journal of Health Behavior.* 2008;32:93-110.
- Katzman B, Markowitz S, McGeary KA. An empirical investigation of the social market for cigarettes. *Health Econ.* 2007;16:1025-39.
- Kavanagh J, Trouton A, Oakley A, Powell C. *A systematic review of the evidence for incentive schemes to encourage positive health and other social behaviours in young people.* London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. 2006.
- Kobus K. Peers and adolescent smoking. *Addiction.* 2003;98 Suppl 1:37-55.
- Kokkevi AE, Arapaki AA, Richardson C, Florescu S, Kuzman M, Stergar E. Further investigation of psychological and environmental correlates of substance use in adolescence in six European countries. *Drug Alcohol Depend.* 2007 11;88:308-12.
- Lader, D. *Smoking-related Behaviour and Attitudes 2007.* Office for National Statistics, London. 2008.
- Leatherdale ST, Strath JM. Tobacco retailer density surrounding schools and cigarette access behaviors among underage smoking students. *Ann Behav Med.* 2007;33:105-11.
- Lovato C, Linn G, Stead LF, Best A. Impact of tobacco advertising and promotion on increasing adolescent smoking behaviours. *Cochrane Database of Systematic Reviews* 2003, Issue 3. Art. No.: CD003439. DOI: 10.1002/14651858.CD003439.
- MacDonald S, Rothwell H, Moore L. Getting it right: designing adolescent-centred smoking cessation services. *Addiction.* 2007;102:1147-50.
- MacFadyen L, Hastings G, MacKintosh AM. Cross sectional study of young people's awareness of and involvement with tobacco marketing. *BMJ.* 2001;322:513-7.
- MacMorran J '*The Truth*'; *A Theatre in Education Programme on Tobacco for Key Stage 4 Pupils Newcastle Healthy School Programme Evaluation Report.* Newcastle-upon-Tyne: Newcastle PCT. 2008.
- Main C, Thomas S, Ogilvie D, Stirk L, Petticrew M, Whitehead M, Sowden A. Population tobacco control interventions and their effects on social inequalities in smoking: placing an equity lens on existing systematic reviews. *BMC Public Health.* 2008;8:178 (6pp).
- Markham WA, Aveyard P, Bisset SL, Lancashire ER, Bridle C, Deakin S. Value-added education and smoking uptake in schools: a cohort study. *Addiction.* 2008;103:155-61.
- Markham WA, Aveyard P, Thomas H, Charlton A, Lopez ML, De Vries H. What determines future smoking intentions of 12- to 13-year-old UK African-Caribbean, Indian, Pakistani and white young people? *Health Educ Res.* 2004;19:15-28.
- Maxwell C, Kinver A, Phelps A. *Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) National Report: Smoking, Drinking and Drug Use among 13 and 15 year olds in Scotland in 2006.* London: BMRB Social Research. 2007.
- Mayhew KP, Flay BR, Mott JA. Stages in the development of adolescent smoking. *Drug Alcohol Depend.* 2000 May 1;59 Suppl 1:S61-81.
- McCambridge J, Strang J. Age of first use and ongoing patterns of legal and illegal drug use in a sample of young Londoners. *Subst Use Misuse.* 2005a;40:313-9.
- McCambridge J, Strang J. Deterioration over time in effect of Motivational Interviewing in reducing drug consumption and related risk among young people. *Addiction.* 2005b;100:470-8.

- McDermott E, Graham H. Young mothers and smoking: evidence of an evidence gap. *Social Science & Medicine*, 63: 1546–1549. 2006.
- McMillan B, Higgins A, Conner M. Using an extended theory of planned behaviour to understand smoking amongst schoolchildren. *Addiction Research and Theory* 2005, 13: 293–306.
- McNeill A. D. The development of dependence on smoking in children. *Br.J.Addict* 1991; 86: 589-592. 1991,
- McNeill, A. D., Jarvis, M. J., Stapleton, J. A., West, R. J., & Bryant, A. "Nicotine intake in young smokers: longitudinal study of saliva cotinine concentrations", *Am.J.Public Health*, 1989; 79 : pp. 172-175.
- McVea KLSP Evidence for clinical smoking cessation for adolescents. *Health Psychology*, 2006;. 25(5): 558-562.
- Meltzer H. *The Mental Health of Young People Looked After by Local Authorities in England*. London: The Stationery Office. ISBN 0 11 621651 4. <http://www.statistics.gov.uk/statbase/Product.asp?vlnk=10432>.
- Michell L. Loud, sad or bad: young people's perceptions of peer groups and smoking. *Health Educ Res*, 1997;12:1-14.
- Michell L, Amos A. Girls, pecking order and smoking. *Soc Sci Med*, 1997;44:1861-9.
- Molyneux A, Lewis S, Antoniak M, Hubbard R, McNeill A, Godfrey C, Madeley R, Britton J. Is smoking a communicable disease? Effect of exposure to ever smokers in school tutor groups on the risk of incident smoking in the first year of secondary school. *Tobacco Control*. 2002;1:241-5.
- Molyneux A, Lewis S, Coleman T, McNeill A, Godfrey C, Madeley R, Britton J. Designing smoking cessation services for school-age smokers: A survey and qualitative study. *Nicotine Tob Res*. 2006;8:539-46.
- Moodie C, MacKintosh AM, Brown A, Hastings GB. Tobacco marketing awareness on youth smoking susceptibility and perceived prevalence before and after an advertising ban. *Eur J Public Health*, 2008;18:484-90.
- Moradi P, Thornton J, Edwards R, Harrison RA, Washington SJ, Kelly SP. Teenagers' perceptions of blindness related to smoking: a novel message to a vulnerable group. *Br J Ophthalmol*. 2007;91:605-7.
- Morgan, A., Malam, S., Muir, J., & Barker, R. *Health and Social Inequalities in English Adolescents: exploring the importance of school, family and neighbourhood. Findings from the WHO Health Behaviour in School-aged Children study*. National Institute for Health and Clinical Excellence. London. 2006.
- Müller-Riemenschneider F, Bockelbrink A, Reinhold T, Rasch A, Greiner W, Willich SN. Long-term effectiveness of behavioural interventions to prevent smoking among children and youth. *Tobacco Control*. 2008;17:301-2. Epub 2008 Jun 3.
- Munafò MR, Wileyto EP, Murphy MF, Collins BN. Maternal smoking during late pregnancy and offspring smoking behaviour. *Addict Behav*. 2006;31:1670-82.
- Myers MG, MacPherson L. Adolescent reasons for quitting smoking: initial psychometric evaluation. *Psychol Addict Behav*. 2008 Mar;22(1):129-34.
- New York American Marketing Association. *American Legacy Foundation - Infect Truth, Silver, Nonprofit/Pro Bono/Public Service, EFFIE Awards 2008*. New York: World Advertising Research Center. 2008.
- NHS Information Centre. *Statistics on NHS Stop Smoking Services: England, April 2007 to March 2008*, NHS Information Centre, Leeds. 2008.
- NICE. *Mass-media and point-of-sales measures to prevent the uptake of smoking by children and young people*. NICE public health guidance 14. London: National Institute for Health and Clinical Excellence, July. 2008a.
- NICE Centre for Public Health Excellence. *Fieldwork on Draft NICE CPHE Public Health Intervention Guidance Recommendations on Measures to Prevent the Uptake of Smoking by Children and Young People Report*. Background information for NICE Guidance PH14.London: National Institute Health and Clinical Excellence. 2008b.
- Nichter M, Nichter M, Lloyd-Richardson EE, Flaherty B, Carkoglu A, Taylor N. Gendered dimensions of smoking among college students. *J Adolesc Research*, 2006;21:215-43.
- Nichter M, Nichter M, Vuckovic N, Quintero G, Ritenbaugh C. Smoking experimentation and initiation among adolescent girls: qualitative and quantitative findings. *Tob Control*, 1997;6:285-95.
- Ofcom. *Media Literacy Audit: Report on UK children's media literacy*. London: Ofcom (Office of Communications). 2008.
- Ogilvie D, Gruer L, Haw S. Young people's access to tobacco, alcohol, and other drugs. *BMJ*. 2005 13;331:393-6.
- Petrie J, Bunn F, Byrne G. Parenting programmes for preventing tobacco, alcohol or drugs misuse in children <18: a systematic review. *Health Educ Res*. 2007;22:177-91.

- Platt S, Amos A, Bitel M, Bowen G, Gnich W, Jones L, Parry O, Cheehy C. *External evaluation of the NHS / ASH Scotland Young People and Smoking Cessation Pilot Programme*. Edinburgh: NHS Health Scotland. 2006.
- Plumridge EW, Fitzgerald LJ, Abel GM. Performing coolness: smoking refusal and adolescent identities. *Health Educ Res*. 2002;17:167-79.
- Plunkett M, Haw S, Cassels J, Moore M, O'Connor M. *Smoking in public places: a survey of the Scottish leisure industry*. ASH Scotland/HEBS: Edinburgh. 2000.
- Potter BK, Pederson LL, Chan SS, Aubut JA, Koval JJ. Does a relationship exist between body weight, concerns about weight, and smoking among adolescents? An integration of the literature with an emphasis on gender. *Nicotine Tob Res*. 2004;6:397-425.
- Pound E, Coleman T, Adams C, Bauld L, Ferguson J. Targeting smokers in priority groups: the influence of government targets and policy statements. *Addiction*. 2005;100 Suppl 2:28-35.
- Power C, Graham H, Manor O. *End of Award Report. Progress report on Socioeconomic circumstances at different life stages and adult smoking*. ESRC Award Number: R000239579. London: ESRC. 2003.
- Pritchard C, Cox M. Comparison of problematic behaviours of 10th and 11th year Southern English adolescents in 1985 and 2005. Part 1: Trends in gender behaviour. *Int J Adolesc Med Health*. 2007;19:127-40.
- Rabin RL. Controlling the Retail Sales Environment: Access, Advertising, and Promotional Activities. In: Bonnie RJ, Stratton K, Wallace RB (Eds.) *Ending the Tobacco Problem: A Blueprint for the Nation*. Committee on Reducing Tobacco Use: Strategies, Barriers, and Consequences Board on Population Health and Public Health Practice. Washington, DD: Institute Of Medicine Of The National Academies, The National Academies Press, pp. 641-652. 2007.
- Ribisl KM, Kim AE, Williams RS. Sales and Marketing of Cigarettes on the Internet: Emerging Threats to Tobacco Control and Promising Policy Solutions. In: Bonnie RJ, Stratton K, Wallace RB (Eds.) *Ending the Tobacco Problem: A Blueprint for the Nation*. Committee on Reducing Tobacco Use: Strategies, Barriers, and Consequences Board on Population Health and Public Health Practice. Washington, DD: Institute Of Medicine Of The National Academies, The National Academies Press, pp. 653-678. 2007.
- Richardson L, Allen P, McCullough L, Bauld L, Assanand S, Greaves L, Amos A, Hemsing N & Humphries K. *NICE RAPID REVIEW Interventions to Prevent the Uptake of Smoking in Children and Young People Full Report. November 22*. (Preventing smoking in children: Review of effectiveness (Full Report) November 07). British Columbia Centre of Excellence for Women's Health. London: NICE. 2007.
- Robinson S, Lader D *Smoking and drinking among adults, 2007*. ONS: Cardiff. 2008.
- Roddy E, Romilly N, Challenger A, Lewis S, Britton J. Use of nicotine replacement therapy in socioeconomically deprived young smokers: a community-based pilot randomised controlled trial. *Tob Control*. 2006 Oct;15(5):373-6.
- Rodham K, Hawton K, Evans E, Weatherall R. Ethnic and gender differences in drinking, smoking and drug taking among adolescents in England: a self-report school-based survey of 15 and 16 year olds. *J Adolesc*. 2005 Feb;28(1):63-73.
- Rootman I, Flay BR. *A study on youth smoking: plain packaging, health warnings, event marketing and price reductions*. Toronto, Ontario, Canada: University of Toronto, University of Illinois at Chicago, York University, Ontario Tobacco Research Unit, Addiction Research Foundation. 1995.
- Ross H, Powell LM, Tauras JA, Chaloupka FJ. New evidence on youth smoking behavior based on experimental price increases. *Contemporary Economic Policy* 2005;23:195-210.
- Royal College of Physicians. *Harm reduction in nicotine addiction: helping people who can't quit*. A report by the Tobacco Advisory Group of the Royal College of Physicians. London: RCP, 2007.
- Sandford A. Trends in smoking among adolescents and young adults in the United Kingdom. Implications for health education. *Health Education*, 108(3): 223-236. 2008.
- Schar E, Gutierrez K, Murphy-Hoefer R & Nelson DE. *Tobacco Use Prevention Media Campaigns: Lessons Learned From Youth In Nine Countries*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. 2006.
- Schooler C, Feighery E, Flora JA. Seventh graders' self-reported exposure to cigarette marketing and its relationship to their smoking behavior. *Am J Public Health*, 1996;86:1216-21.
- Scottish Executive (now Scottish Government) *Towards A Future Without Tobacco: The Report of the Smoking Prevention Working Group*. Edinburgh: Scottish Executive. 2006.

- Scragg R, Wellman RJ, Laugesen M & DiFranza JR Diminished autonomy over tobacco can appear with the first cigarette. *Addictive Behaviours*, 33: 689-98. 2008.
- Schnohr C W, Kreiner S, Rasmussen M, Due P, Currie C, Diderichsen F. The role of national policies intended to regulate adolescent smoking in explaining the prevalence of daily smoking: a study of adolescents from 27 European countries. *Addiction*, 2008; 103: 824-831.
- Siegel M, Albers A B, Cheng D M, Biener L, Rigotti N A. Effect of local restaurant smoking regulations on progression to established smoking among youths. *Tobacco Control*, 2005; 14: 300 - 306.
- Slater MD. Media Campaigns and Tobacco Control. In: Bonnie RJ, Stratton K, Wallace RB (Eds.) *Ending the Tobacco Problem: A Blueprint for the Nation*. Committee on Reducing Tobacco Use: Strategies, Barriers, and Consequences Board on Population Health and Public Health Practice. Washington, DD: Institute Of Medicine Of The National Academies, The National Academies Press, pp. 679-689. 2007b.
- Slater SJ, Chaloupka FJ, Wakefield M, Johnston LD, O'Malley PM (2007a). The impact of retail cigarette marketing practices on youth smoking uptake. *Arch Pediatr Adolesc Med*, 2007a;161:440-5.
- Sly DF, Heald GR, Ray S. The Florida "truth" anti-tobacco media evaluation: design, first year results, and implications for planning future state media evaluations. *Tob Control*, 2001;10:9-15.
- Smith D *Substance use at ages 12 to 17. Findings from the Edinburgh Study of Youth Transitions and Crime*. Home Office. [www.drugs.gov.uk/publication-search/acmd/pathways-to-problems/Appendix7.pdf?view=Binary](http://www.drugs.gov.uk/publication-search/acmd/pathways-to-problems/Appendix7.pdf?view=Binary) 2005.
- Sowden AJ, Stead LF. Community interventions for preventing smoking in young people. *Cochrane Database of Systematic Reviews* 2003, Issue 1. Art. No.: CD001291. DOI: 10.1002/14651858.CD001291.
- Sowden AJ. Mass media interventions for preventing smoking in young people. *Cochrane Database of Systematic Reviews* 1998, Issue 4. Art. No.: CD001006. DOI: 10.1002/14651858.CD001006.
- Sparks CH. Advocacy as a Tobacco Control Strategy. In: Bonnie RJ, Stratton K, Wallace RB (Eds.) (2007). *Ending the Tobacco Problem: A Blueprint for the Nation*. Committee on Reducing Tobacco Use: Strategies, Barriers, and Consequences Board on Population Health and Public Health Practice. Washington, DC: Institute Of Medicine Of The National Academies, The National Academies Press, pp. 690-703.
- Sparks R. Youth awareness of tobacco sponsorship as a dimension of brand equity. *Advertising and Marketing to Children*, 1999;1:193-218.
- Sproston K, Mindell J. *Health Survey for England 2004: The health of minority ethnic groups*, The Information Centre, Leeds. 2006.
- Stead LF, Lancaster T. Interventions for preventing tobacco sales to minors. *Cochrane Database of Systematic Reviews* 2005, Issue 1. Art. No.: CD001497. DOI: 10.1002/14651858.CD001497.pub.
- Stewart-Knox BJ, Sittlington J, Rugkåsa J, Harrison S, Treacy M, Abaunza PS. Smoking and peer groups: results from a longitudinal qualitative study of young people in Northern Ireland. *Br J Soc Psychol*. 2005 44:397-414.
- Stjerna ML, Lauritzen SO, Tillgren P. "Social thinking" and cultural images: teenagers' notions of tobacco use. *Soc Sci Med*. 2004;59:573-83.
- Sussman S, Dent CW, Stacy AW. Project Towards No Drug Abuse: A review of the findings and future directions. *Am J Health Behav*, 2002;26:354-65.
- Sussman S, Sun P Youth tobacco use cessation: 2008 Update. *Tobacco Induced Disease*, 2009: 5, 3.
- Sussman S, Sun P, Dent SW A Meta-Analysis of Teen Cigarette Smoking Cessation. *Health Psychology*, 2006: 25: 549-557.
- Sweeting H, West P. "Social class and smoking at age 15: the effect of different definitions of smoking", *Addiction* 2001 96, 1357-1359.
- Thomas RE, Baker PRA, Lorenzetti D. Family-based programmes for preventing smoking by children and adolescents. *Cochrane Database of Systematic Reviews* 2007, Issue 1. Art. No.: CD004493. DOI: 10.1002/14651858.CD004493.pub2.
- Thomas RE, Lorenzetti D, Spragins W. Mentoring of children and adolescents for preventing drug and alcohol use. (Protocol). *Cochrane Database of Systematic Reviews* 2008a, Issue 4. Art. No.: CD007381. DOI: 10.1002/14651858.CD007381
- Thomas RE, Perera R. School-based programmes for preventing smoking. *Cochrane Database of Systematic Reviews* 2006, Issue 3. Art. No.: CD001293. DOI: 10.1002/14651858.CD001293.pub2.

- Thomas S, Fayter D, Misso K, Ogilvie D, Petticrew M, Sowden A, Whitehead M, Worthy G. Population tobacco control interventions and their effects on social inequalities in smoking: systematic review. *Tobacco Control* 2008b; 17:230-237.
- Tocque K, Edwards R, Fullard B. The impact of partial smokefree legislation on health inequalities: evidence from a survey of 1150 pubs in the North West of England. *BMC Public Health* 2005; 5: 91-96.
- Turner K, West P, Gordon J, Young R, Sweeting H. Could the peer group explain school differences in pupil smoking rates? An exploratory study. *Soc Sci Med*. 2006;62:2513-25.
- Turner KM, Gordon J, Young R. Cigarette access and pupil smoking rates: a circular relationship? *Health Promot Int*. 2004;19:428-36.
- Turner KM, Gordon J. Butt in, butt out: pupils' views on the extent to which staff could and should enforce smoking restrictions. *Health Educ Res*. 2004;19:40-50.
- Tyas SL, Pederson LL. Psychosocial factors related to adolescent smoking: a critical review of the literature. *Tob Control*. 1998;7:409-20.
- UK Film Council. *08 Statistical Yearbook*. London: UK Film Council. 2008.
- van Jaarsveld CH, Fidler JA, Simon AE, Wardle J. Persistent impact of pubertal timing on trends in smoking, food choice, activity, and stress in adolescence. *Psychosom Med*. 2007; 69:798-806.
- Viner RM, Haines MM, Head JA, Bhui K, Taylor S, Stansfeld SA, Hillier S, Booy R. Variations in associations of health risk behaviors among ethnic minority early adolescents. *J Adolesc Health*. 2006; 38:55.
- Wakefield MA, Ruel EE, Chaloupka FJ, Slater SJ, Kaufman NJ. Association of point-of-purchase tobacco advertising and promotions with choice of usual brand among teenage smokers. *J Health Commun*, 2002;7:113-21.
- Wakefield M, Germain D, Durkin S, Henriksen L. An experimental study of effects on schoolchildren of exposure to point-of-sale cigarette advertising and pack displays. *Health Educ Res*, 2006;21:338-47.
- Wakefield MA, Germain D, Durkin SJ. How does increasingly plainer cigarette packaging influence adult smokers' perceptions about brand image? An experimental study. *Tob Control*, 2008;17:416-21.
- Walker ZA, Townsend J. The role of general practice in promoting teenage health: a review of the literature. *Fam Pract*. 1999;16:164-72.
- Walsh RA, Tzelepis F. Adolescents and Tobacco Use: Systematic Review of Qualitative Research Methodologies and Partial Synthesis of Findings. *Substance Use & Misuse* 2007; 42: 1269-1321.
- Walters S T, Wright J A, Shogog R. A review of computer and Internet-based interventions for smoking behavior. *Addictive Behaviors* 2006; 31: 264-277.
- West P, Sweeting H, Young R. Smoking in Scottish youths: personal income, parental social class and the cost of smoking. *Tobacco Control*. 2007;16:329-35.
- West P, Sweeting H, Leyland A. School effects on pupils' health behaviours: evidence in support of the health promoting school. *Res Papers Educ* 2004;19:261-91.
- West R. Smoking toolkit study: protocol and methods. [www.smokinginengland.info/Ref/paper1.pdf](http://www.smokinginengland.info/Ref/paper1.pdf). 2006.
- West R. The Smoking Toolkit Study. [www.smokinginengland.info](http://www.smokinginengland.info). 2008.
- West R, Townsend J, Joossens L, Arnott D, Lewis S. Why combating tobacco smuggling is a priority. *BMJ*, 2008;9; 337:a1933. doi: 10.1136/bmj.a1933.
- Wetzels JJ, Kremers SP, Vitória PD, de Vries H. The alcohol-tobacco relationship: a prospective study among adolescents in six European countries. *Addiction*. 2003;98:1755-63.
- Wiehe SE, Garrison MM, Christakis DA, Ebel BE, Rivara FP. A systematic review of school-based smoking prevention trials with long-term follow-up. *J Adolesc Health*. 2005;36:162-9.
- Willemsen MC, De Zwart WM. The effectiveness of policy and health education strategies for reducing adolescent smoking: a review of the evidence. *J Adolesc*. 1999;22:587-99.
- Wiltshire S, Amos A, Haw S, McNeill A. Image, context and transition: smoking in mid-to-late adolescence. *J Adolesc*. 2005;28:603-17.
- Woods S, Mair M, Smith H, Barlow A, Smith D, Wainwright A, Springett J. *The Liverpool Longitudinal Study on Smoking: Experiences, beliefs and behaviour of adolescents in Secondary School 2002-2006. A Retrospective Review*. Liverpool: Liverpool John Moores University & The Roy Castle Lung Cancer Foundation. 2008. Online: <http://www.roycastle.org/research/lssr.htm> [accessed December 11<sup>th</sup> 2008]

Woodall AA, Sandbach EJ, Woodward CM, Aveyard P, Merrington G. The partial smoking ban in licensed establishments and health inequalities in England: modelling study. *British Medical Journal* 2005; 488-9.

Woolfall K, Porcellato L, Stredder K, Wareing M, Atkinson A, Lushey C, McVeigh J & Sumnall H. *The prevention of uptake of smoking by children and young people, with reference to the areas of mass media and the sale of tobacco products: findings from a multi-method primary research study*. Final Report by the National Collaborating Centre Drug Prevention Centre for Public Health, JMU for NICE Guidance PH14. London: National Institute for Health and Clinical Excellence. 2008.

Wright AJ, French DP, Weinman J, Marteau TM. Can genetic risk information enhance motivation for smoking cessation? An analogue study. *Health Psychol.* 2006;25:740-52.





## APPENDIX 1

Copy of letter confirming attendance and describing purpose and format of the workshop.

Dear Colleague,

### **WORKSHOP - A REVIEW OF YOUNG PEOPLE AND SMOKING IN ENGLAND**

Thank you for agreeing to participate in this workshop which promises to be a very lively event with a wide range of policy makers, practitioners and researchers, drawing on national and international experience, attending – the participant list is attached.

For those staying at the hotel, your booking has been made and the hotel already has a list. Please let them know when you check in that you are part of the Institute for Social Marketing's group. The address of the hotel and location for the dinner on the evening of the 7th is:

**Meliã White House Hotel, The Osnaburgh Suite, Albany Street, Regents Park, London NW1 3UP**

The workshop location on the 8th is:

**The Open University, Meeting Room 1, 1-11 Hawley crescent, Camden Town, London NW1 8NP**

The workshop has a very clear focus and a very tight agenda for the two days. The purpose of the workshop is:

*To identify the key issues in relation to future policy options on relation to young people and smoking.*

You will see from the attached programme, that the workshop has been structured to ensure that there is a balance of input and discussion, with participants working in small groups. We have allocated people into these groups to get what we hope will be the right mix.

You will also see that the first task on the 8th is to consider the review. Detailed comments will be dealt with separately but we will spend a little time broadly assessing the evidence base as presented in the review. A copy of the draft review will be sent by the end of the week.

The workshop schedule is tight and for this reason we would ask that you help with time-keeping. Our remit for this workshop is clear and we have to reach conclusions by the close of play and we cannot go over time. This is especially important if you are presenting so we would ask that you time your presentation as accurately as you can and please bring a data stick/ flash drive.

The dinner on Wednesday the 7th is the prelude to the workshop, with short informal presentations to get us thinking about the issue from the viewpoint of being a young person. This may be something of a stretch for some of us but worthwhile if only to challenge our usual way of thinking! We do hope that you can make the dinner as it will set the scene for the following day.

We look forward to seeing you on the 7th and 8th, and working with you. We hope it will also be an opportunity for you to meet with old and new colleagues and that new ideas and new ways of thinking will flow from the event at the beginning of what is after all - the new year.

Meanwhile if you have any queries, please contact either of us.

Best wishes, **Amanda Amos & Gerard Hastings**

## APPENDIX 2

### List of Workshop Participants - London, 7<sup>th</sup> and 8<sup>th</sup> January

Name	Organisation
Prof Amanda Amos	Edinburgh University
Prof Gerard Hastings	Stirling University & Open University
Kathryn Angus	Stirling University
Yvonne Bostock	Bostock Consulting
Dr Linda Bauld	Bath University
Andrew Black	Department of Health
Daniel Clayton	Head of Youth Programme, ASH Wales
Andrea Crossfield	North West Regional Tobacco Policy Manager
Dr Catherine Dennison	Department of Health
Prof Tim Dewhirst	University of Guelph, Canada
Martin Dockrell	ASH, London
Dr Matthew Farrelly	Research Triangle Institute, USA
Dr Jenny Fidler	UCL
Lucy Holdstock	Department of Health
Andy Hull	Chair of Smokefree Liverpool
Lisa Jones	Liverpool John Moores University
Elsbeth Lee	Cancer Research UK
Christine McGuire	Department of Health
Prof Laurence Moore	Cardiff University
Dr Lesley Owen	NICE
Martin Raymond	Director, Cloudline PR, Edinburgh
Ailsa Rutter	Director, Fresh- Smoke Free North East
Anne Schulthess	Head of Youth Services, QUIT
Karla Sneegas	Indiana Tobacco Prevention and Cessation, USA

## APPENDIX 3

Workshop programme.

### **A REVIEW OF YOUNG PEOPLE AND SMOKING IN ENGLAND**

**Wednesday 7<sup>th</sup> January: Dinner - 7.00 for 7.30pm**

**Location: Meliã White House Hotel, The Osnaburgh Suite, Albany Street, Regents Park, London NW1 3UP**

There will be short focused presentations on the experience of youth and youth culture – what it is to be a young person growing up in the 21<sup>st</sup> century. (These will be presented informally throughout the dinner e.g. laptop presentations, ad hoc discussion and responses.) These are intended as scene-setting exercises. They will be less about smoking and more about young people themselves. The purpose will be to try to ensure a focussed approach is taken that, as far as possible, addresses the issue of young people and smoking from a perspective of young people and their lifestyles and the wider perspective of the world in which they are growing up; and that discussion focuses on young people rather than smoking and, in subsequent workshop discussion, how young people are likely to be affected by initiatives to prevent and reduce smoking.

These will be informal presentations and give participants an opportunity to network, to get together in their small group discussions and give their comments and reactions to the short presentations.

In introducing the event, Gerard will emphasise the importance of developing new ideas and encourage lateral thinking – going beyond what has been done to explore what could be new and different approaches. This will emphasise the importance of not being restrained by the evidence of what has been done but rather exploring new avenues and options.

## WORKSHOP PROGRAMME

**Thursday 8<sup>th</sup> January**

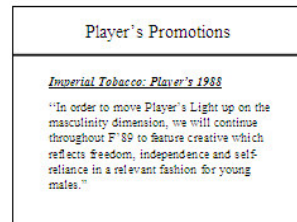
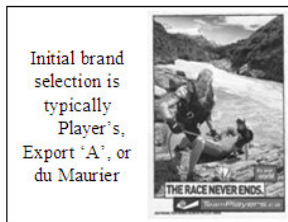
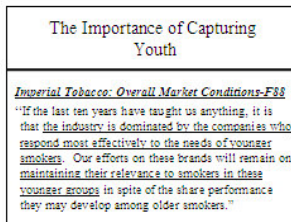
**Location: Meeting Room 1, The Open University, 1-11 Hawley Crescent, London NW1 8NP**

9.00 - 9.05	<i>Welcome and introductions</i>
9.05 - 9.15	<i>Purpose of workshop and reprise of the previous evening discussions</i>
9.15 - 9.35	<i>Presentation of draft review</i>
9.35 - 10.00	<i>Plenary discussion of the review document</i>
10.00 - 11.00	<i>'What works' – Three international case studies of 'success in reducing smoking in young people'</i> <i>Tim Dewhirst, University of Guelph, Canada</i> <i>Matthew Farrelly, RTI International, USA</i> <i>Karla Sneegas, Indiana Tobacco Prevention and Cessation, USA</i>
11.00 - 11.30	<i>Coffee and discussion in small groups of 3</i>
11.30 - 12.00	<i>'What works' - Plenary session to explore and discuss case studies</i>
12.00 - 1.00	<i>Mini group discussions (6) to explore and identify the issues that participants see as important in relation to future policy options – in context of likely effectiveness</i>
1.00 – 1.45	<b>LUNCH</b>
1.45 – 2.30	<i>Presentations from mini groups of key policy options (Groups asked to identify 2/3 key policy options)</i>
2.30 – 3.00	<i>'A response' - Speakers panel to give their responses to proposed policy options</i>
3.00 – 4.00	<i>Plenary session to discuss and prioritise issues relating policy options and related research issues</i>
4.00 - 4.10	<i>Summing up – Gerard Hastings and Amanda Amos</i>
4.10 - 4.15	<i>Close and thanks</i>

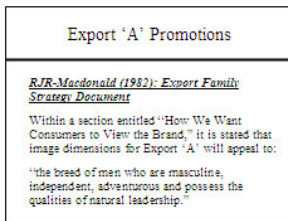
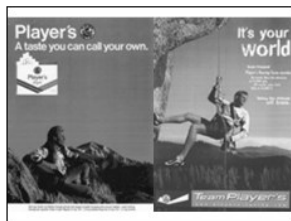
## APPENDIX 4

**‘What works’ – Three international case studies of  
‘success in reducing smoking in young people’**

1.



1



2

- Most initial smoking experiences occur in a social context with peers
- Adolescents, predisposed to smoking, may see it as a way to propel themselves into 'maturity'
- Smoking may constitute a rebellious act meant to undermine adult authority
- Youth assert their independence in part by shifting their values from those of the parents to those of their peers

**Smoking in Adolescence**  
Images and Identities  
Barbara Lloyd and Nicole Lurie  
and Jean-Pierre, Steven Roberts and David Wood

**ADOLESCENTS ARE NOT ANY LONGER**  
PARENTS



### Canada as a Success Story

- A multi-faceted, comprehensive tobacco control strategy
- A stringent regulatory environment

According to B.A.T. (2008) documentation, Canada is considered to be one of the 'darkest' markets in the world, given that their available options for marketing communications are limited



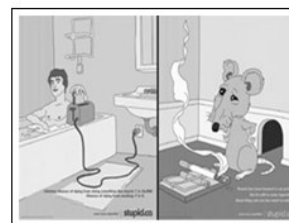
### Cigarette Package Health Warnings




### The exposé TID campaign in Ottawa called for the removal of tobacco product "powerwalls"

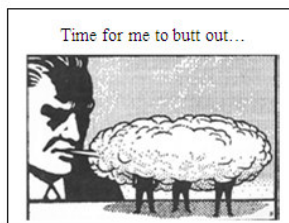


3



### Looking Ahead

- Tobacco representation in entertainment media, social media (Web 2.0), and popular culture
- Tobacco and alcohol as product complements

4

2.

**RTI** translating knowledge into practice

**Tobacco Control Interventions for Youth and Young Adults—Perspectives from the U.S.**

Matthew C. Farrelly, Ph.D.

www.rti.org **RTI**

**Interventions**

- Change the environment (all ages)
  - Taxes
  - Smoke-free policies
  - Ad bans
  - Product regulation
  - Smoke rooms
- Educate (early years)
  - Media (early)
  - Basic facts about smoking
- Persuade (teens and beyond)
  - Social misperceptions
  - Cigarettes
- Empower youth with information, but *never* preach


www.rti.org **RTI**

**Adolescence—Taking Control**

- How do we connect with youth in meaningful ways?
- Last night we talked about
  - Research
  - Truth
  - Teen media
- Adolescents are in the process of taking control
  - Cakes to children to teens to young adults
- What was missing from Adica presentation?

www.rti.org **RTI**

**From this**



www.rti.org **RTI**

**To this...**



www.rti.org **RTI**

**To this...**



www.rti.org **RTI**

**Media**

- Media campaigns can work
- What's more elusive is understanding "active ingredients" in successful campaigns
- Comprehensive evidence that the truth campaign has been successful. Demonstrated impact on
  - Attitudes
  - Beliefs, intentions and perceptions of use
  - Beliefs about second-hand smoke exposure
  - Perceptions and intentions (in teens)
- Little evidence (in my opinion) of true synergies with other interventions despite push for "comprehensive" approaches

www.rti.org **RTI**

**What I learned from truth**

- Never preach
- Be nimble and authentic
- Use credible actors/spokespeople
- Respect teens' intelligence
  - Smoker with facts
  - Understand their culture
- Use "Think, Don't Smoke" as a model of what not to do
- Mass communication and viral marketing

www.rti.org **RTI**




**Correcting Misperceptions—Vermont's 8 out of 10 Campaign**

**In Vermont, 8 out of 10 teens choose not to smoke cigarettes. In fact 84% don't smoke. 8 out of 10. Remember that.**

www.rti.org **RTI**

**Price/tax**

- Higher prices prevent progression to regular use, but do little to prevent experimentation
- Reasonably large effects for young adults
  - Effects significantly larger than for other adults
  - Effects may be decreasing over time in the US
- Need to have a comprehensive tax policy that includes all forms of tobacco to encourage unintended effects (e.g., roll your own, compensation)

www.rti.org **RTI**

#### School-based tobacco prevention education

- Literature review summed up this area nicely
  - Mixed evidence
  - Longer term studies generally show no effects
- School context may be inappropriate setting for tobacco prevention—authority figures sending “just say no messages”

www.ert.org



#### Community-based interventions

- US Centers for Disease Control and Prevention recommends focusing on promoting smoke-free changes in social norms through policy change
  - The strategy is “broad over individual” focused educational and social approaches with a smaller scope of impact
- Implement policies that have the greatest population impact on tobacco use (e.g., smoke-free policies, excise taxes)
- Community partner efforts are needed to effect policy change in settings including homes, workplaces, schools, places of worship, places of entertainment, health care settings, civic organizations, and other public places

www.ert.org



#### Social norm changes

- Some states have focused efforts on adults (18+ or 21+), betting on a trickle down effect
  - Some evidence to support this
  - Prevention that is education is challenging with true youth interest and preferences
  - May need to achieve change among youth and young adults

www.ert.org



#### Community Interventions in Practice

- Often focus too much on community education rather than policy change
- What is the policy change in a smoke-free world?
- Youth-oriented interventions preach to the converted
- Promising young adult intervention has yet to emerge

www.ert.org





## 3.

### Fighting Youth Smoking In Indiana, USA

Karla S. Sneegas, MPH  
Executive Director  
Indiana Tobacco Prevention & Cessation

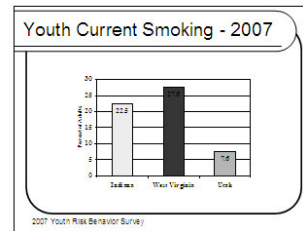


### What We're Fighting

- Tobacco company marketing outspends us 42-1
- Indiana's culture
- Political will for policy change
- Ever changing youth culture

*"We don't smoke it. We just sell it. We reserve the right to smoke for the young, the poor, the black and the stupid."*


Testimony of former Rep. Lawrence Gooding at Senate hearing, Jan. 12, 2007



### Changing Social Norms for Indiana Youth


- Changing attitudes
- Changing beliefs and perceptions
- Changing behavior

### Changing Social Norms for Indiana Youth



- Youth lead
- Anti-tobacco industry
- Youth planned and executed tobacco control guerrilla tactics
- Youth stating the obvious

### Changing Social Norms for Indiana Youth




- Youth are indoctrinated into, and inherit, their community
- Too many societal cues that tobacco use is okay
- Adults control and have power to change social norms
- Youth are change agents

### Changing Social Norms for Indiana Youth

- Change happens "in" and "by" the community
- No single answer
- Create inescapable encouragement not to use tobacco
- Expose tobacco industry manipulation
- Based on the best science available (policy- media- program)
- Comprehensive and sustained

### Voice Movement At Work




- Speak out against Big Tobacco to other teens and their community
- Help their families deal with tobacco addiction
- Advocate for policy change
- Pressure movie studios to address campaign "Smoking in the Movies"
- Sponsor state, regional and local events

### Voice Movement At Work: The Brand



- Cool and edgy with broad youth appeal
- Wakes up adults
- Minimizes formal structure
- Fun and empowering to youth

### Voice Movement At Work: The Message




- Not against the smoker- it's about the smoke
- Fight against the marketing tactics of the tobacco industry
- Dangers of smoking and secondhand smoke


### Voice Embedded Into Total Program

Our "Indiana Model" for youth-based tobacco control programs is:

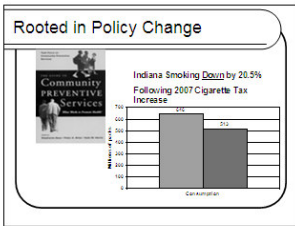
- Embedded into the total ITPC community-based model
- Rooted in policy change
- Driven by hard-hitting media campaigns



### Voice Embedded Into Total Program



- Local Community Partners
- Minority Partners
- Statewide Partners
- Youth Partners



- ### Voice Driven by Hard Hitting Media Campaigns
- Builds an image
  - Shapes perceptions
  - Changes attitudes and beliefs
  - Reach
  - Bigger than just 'my' community

### Voice Driven by Hard Hitting Media Campaigns

Client: ITPC  
Agency: Promotus  
Title: Voice - Protest  
Length: :30  
Audio: Stereo  
Date: 1/11/2007  
ISCI: 10007573-3

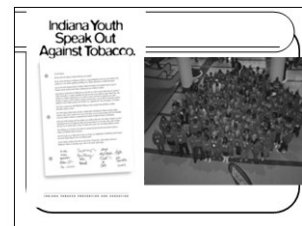
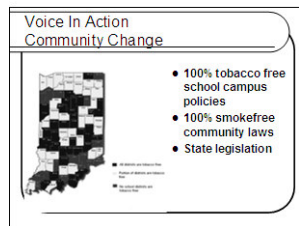
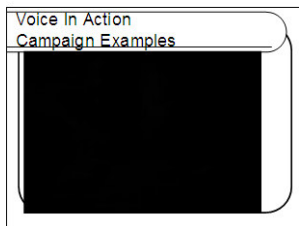
### Voice In Action Campaign Examples

Client: ITPC  
Agency: Promotus  
Title: Voice - Pledge  
Length: :30  
Audio: Stereo  
Date: 1/12/2007  
ISCI: 10007573-1

### Voice In Action Campaign Examples

Client: ITPC  
Agency: Promotus  
Title: Voice - Pledge  
Length: :30  
Audio: Stereo  
Date: 1/12/2007  
ISCI: 10007573-1

- ### Voice In Action Campaign Examples
- Youth involved in creative production
  - Youth summit provides place and cause
  - Youth take the message to their friends
- 



- ### Voice In Action Community Change
- Don't Glam Tobacco
- Road Tour
  - Petitions
  - Tool Kit
  - Project Voice Summit 09
  - Movie Industry Policy Change
- 

- ### Voice In Action Community Change
- Outreach to Indiana communities
  - Earned media
  - Bridge to parents
  - Reaches youth individually
- 
- Leesville, LA - Rick Stoddard, the man who authored an anti-tobacco crusade after losing his 48-year-old wife to lung cancer eight years ago spoke to youth.

- ### Voice In Action Community Change
- Guess what Mr. Stoddard-my mom is QUITTING!!!! On Saturday, she's promised to quit, and I'm supposed to help her stay away from the cigarettes. Thank you so much for your help. Her life is going to change. God Bless You Katie Phillips, Mt. Vernon High, IN
-

### Voice In Action Community Change

- Technology Tools for Continuity
  - [www.voice.tv](http://www.voice.tv)
  - Facebook
  - Twitter



### "Seeing is Believing"

- Confirmed awareness at 80% among youth (2004-2005)
- Twice as likely to report knowledge of dangers and risks of smoking
- Awareness of TV ad were 45% more likely to agree smoking is a serious problem
- Youth aware of Voice 13 times more likely to hold negative attitudes toward smoking

### The Next Frontier

- New products
- Circumventing current policies
- New technology
- Just a few BIG tobacco companies
- Cigarette companies control smokeless, cigars and new products
- Global focus

### Dissolvable Tobacco



### Other Tobacco Products



"It's a well-known fact that teenagers like sweet products. Honey might be considered."

1998 B&W memo, "Youth Cigarette - New Concepts."

### New Spin on Old Brands



"focus on products that are 'wow,' and 'that add fun and excitement to the category.'"

-- Cressida Lozano, Vice President for Marketing of the Camel brand

### The Next Frontier

- Require graphic health warnings at the point of purchase
- IRB approval for pilot testing of products
- License tobacco manufacturers and impose performance standards- impose fines when they do not meet standards
- Ban all new products in Indiana markets known to addict children
- Equalize taxes and regulations on other tobacco products (cigars, snus, other)

### VOICE in Action



### VOICE in Action



### For More Information on ITPC

- Visit our three (3) websites:
  - [www.itpc.in.gov](http://www.itpc.in.gov)
  - [www.whitelles.tv](http://www.whitelles.tv)
  - [www.voice.tv](http://www.voice.tv)
- Contact Indiana Tobacco Prevention and Cessation- 317.234.1787
- [ksneegas@itpc.in.gov](mailto:ksneegas@itpc.in.gov)